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WPB Orders 5 Per Cent Cut in Newsprint

Reduction in Consumption For Third Quarter Beginning July 1 Follows Recommendation of Advisory Committee—First 25 Tons to Newspapers Using Less Than 500 Tons Quarterly Not Included.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 7, 1943 — Newspaper publishers are required to make further cuts in their consumption of newsprint during the third quarter, ranging up to 5% for larger users, the War Production Board announced today.

This reduction, curtailing the use of newsprint, follows the recommendations of the Newspaper Industry Advisory Committee announced by the WPB on June 18.

Limitation Order L-240, as amended, otherwise is substantially unchanged, H. M. Bitner, Director of the Printing and Publishing Division, WPB, stated.

Under the original order dated December 31, 1942, he pointed out, newspapers were limited each quarter to 100% of the tonnage of paper used in printing their net paid circulation during the corresponding quarter of 1941, plus a 3% allowance for production waste. At the time of issuance, it was estimated that in meeting such a requirement, there would be an over-all reduction in current newsprint consumption of approximately 10%. This, however, was not accomplished and a further cut was found necessary.

At the Newspaper Industry Advisory Committee meeting held June 17, it was recommended that an additional cut of 5% be taken for the third quarter. This was also agreed to by the Labor Advisory Committee on June 28. However, under the amendment effective July 5, 1943, the additional 5% cut does not apply to the first 25 tons for newspapers using less than 500 tons per quarter. This provision is designed to aid the operation of smaller newspapers.

Examples of how the additional reduction will operate for various representative tonnage groups on a sliding scale basis are as follows:

Users of Tons per Quarter	Percentage Cut Required
25 tons	0.00 per cent
50	2.50
75	3.33
100	3.75
200	4.33
300	4.60
400	4.70
500 tons or more	5.00

The WPB order follows the advisory committee's recommendations. The only other changes in the order consist of language simplifications which do not affect the substance of the regulation.

Mr. Bitner emphasized to newspaper publishers that the necesstiy for economy in the use of print paper becomes more pressing with each passing week.

Under new requirements, requests for exception to the order limiting paper use during the 3-month period commencing July 1, 1943, should be filed with the Newspaper Section of the Printing and Publishing Division by July 15, 1943.

Any usage of paper over the quota, until an exception is granted, will be at the applicants risk. The Newspaper Section will endeavor to act promptly on all applications, Mr. Bitner pointed out. Failure of newspaper publishers to live within the allowed usage in any quarter necessitates reference of all such cases to the WPB Compliance Division.

When considering requests for additional tonnage, the Newspaper Section will not recommend to the WPB Appeals Board that extra paper be granted for the publication of special editions. No grant of additional tonnage will be recommended on the basis of circulation gains achieved through prize contests or other similar promotional campaigns, it was stated. Nor will additional tonnage be recommended for newspapers to print circulars, throwaways or advertising supplements not physically incorporated in the newspapers themselves. However, this does not prevent a commercial printing plant, which may or may not be owned by a newspaper, from using its own tonnage quota for the production of such printed matter in accordance with the provisions of Limitation Order L-241.

It should be noted that army camp publications are considered commercial printing and consequently are governed by L-241 and not by L-240 which is the newspaper limitation order.

Newspaper publishers were reminded also of the consistent policy of the War Production Board to consider each request for an additional amount of print paper under L-240 solely upon its own merits, based upon all the facts which the publisher considers pertinent to the issue of whether the order will occasion an unreasonable hardship to him during the third quarter.

(Continued on page 21)

Employment in Wisconsin Mills Increasing

May Payrolls Show Gain With Many Women Added to Replace Men — Pluswood, Inc. Announces New Process For Impregnating Wood — Gilbert Paper Advertisement Wins Award — Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 6, 1943—Manpower in paper and pulp mills and allied industries is climbing back to the total of a year ago, although many women are now on the payrolls in the place of men. Reports of the Wisconsin Industrial Commission show that there were 23,600 workers on the May payrolls, as compared with 23,500 in April, a gain of 0.4%. In May of 1942 the mills had 24,000 workers.

Payrolls are up 0.9% from May over April, and 8.3% from a year ago, with the weekly average now at $844,000 as against $837,000 in April and $780,000 in May, 1942.

Hours worked now average 43.8 per week at an average rate of 81.8 cents, or $35.82 per week.

The Milwaukee metropolitan area also showed some gains, with 2,035 workers on the May payrolls, up 1.4% from April. Payrolls also gained 1.3%, for a weekly average of $82,349. The hourly rate is below the state average, standing at 79.1 cents for an average work week of 46.6 hours, and average weekly pay of $36.85.

Announces New Wood "Alloy" Process

Pluswood, Inc., a new firm at Oshkosh, Wis., is using a new process of impregnating wood to produce an organic "alloy" lighter than aluminum and as strong as many metals. The process has been placed at the disposal of the government for general adoption in plants throughout the country.

The new process not only increases the material's weight-strength ratio but reduces the resin content of the wood sharply, with a resultant large saving in critical chemical substance.

The formula was worked out by Pluswood research technicians after experimental work at the United States Forest Products Laboratory at Madison, Wis. The new product is being adapted to undisclosed war uses. Unaffected by extremes of temperature and resistance to fire and mild acids, it can be used for gears, bushings, structural beams, motor vehicle bodies and other purposes.

Women Assigned to Guard Mill

As a means of relieving the manpower shortage, the Kimberly-Clark Corporation, Neenah, Wis., has assigned three women as daytime guards at its Badger-Glove mill. They work in compliance with War Department regulations, and relieve men for heavier work.

Gilbert Co. Advertisements Wins Award

An advertisement of the Gilbert Paper Company, Menasha, Wis., appearing in Fortune Magazine and entitled, "Our Street Corners Must Not Be Next," won the company a war advertising award at the annual banquet of the Milwaukee Advertising Club, Milwaukee, Wis., recently. The award reads: "Citation for meritorious service in contributing to the American war effort through patriotic, unselfish advertising."

R. G. Whale of the Gilbert Company, attended the banquet and acknowledged the award in behalf of the company. The contest was for Wisconsin firms, and was judged by Chester J. La Roche, New York, G. H. Dennison, Pittsburgh, and G. D. Crain, Jr., Chicago. Several Gilbert advertisements were on display recently at the Milwaukee Art Institute in an exhibition of paintings depicting war scenes used in conjunction with advertising.

Kimberly-Clark Golfers Meet

Kimberly-Clark Corporation employees at Neenah, Wis., held a golf jamboree Saturday afternoon, June 26, at Ridgeway Golf Club, with Chester Bland shooting a 74 to take low honors. Herbert Stinski won the prize for second low, and Homer Malmstrom took the blind bogey honors.

H. P. Thompson won the prize for the high score, Ned Hooper for being nearest the pin on Hole 8, and Paul Bowman for being nearest the pin on Hole 13. John Murphy and Norman Jansen won honors for the longest drives during the day. Goodfellowship prizes also were given.

Scores will be used as qualifying scores for the Kimberly-Clark golf flights during the summer, with pairings soon to be announced.

Machine Tender Meets Fatal Accident

BALTIMORE, Md., July 6, 1943—Caught between two rollers when his foot slipped while he was feeding paper through driers, an employee of the Bartgis Brothers Company, Ilchester, Md., was crushed to death July 2.

The victim was Matt Cook, forty-five. Officials of the company said the paper broke as Mr. Cook was feeding it to the driers and that the workman's foot slipped as he placed it on a dummy roller to continue the feeding.

Catonsville police took the man to St. Agnes' Hospital, where he was declared dead on arrival.

Mr. Cook formerly was a machine tender for the Mead Corporation Heard Division, Lynchburg, Va., and the Chesapeake Paper Board Company, Baltimore, Md.

WPB Defines Lists Rope Grades

WASHINGTON, D. C., July 7, 1943—Specific definitions of three grades of waste manila rope were announced today by the War Production Board in an amendment to General Conservation Oorder M-294. These definitions cover No. 1 large waste manila rope, No. 1 small waste manila rope and uncut manila fenders, and conform with the definitions of OPA Price Schedule No. 47.

There were no changes in the substance of Order M-294, as amended June 7, which limits the use of this raw material in the manufacture of rope and specific types of papers, the WPB Pulp and Paper Division stated.

Future Price of Newsprint Yet Undecided

No Definite Result of Conference Between Officials of OPA and Canada's Wartime Prices and Trade Board Expected For Several Weeks — Paper Mill Strike Problems Now Being Investigated.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 6, 1943—Officials of the U. S. Office of Price Administration and Canada's Wartime Prices and Trade Board have been in conference in Montreal on newsprint problems, the principal topics under consideration being the future price of newsprint and the question of newsprint supply. It is understood that it may be several weeks at least before any definite decisions are announced, as considerable further information has yet to be assembled bearing on the request of both Canadian and the U. S. producers for sanction of a further price rise to absorb paper production cost.

Brief Statement Issued After Conference

After the conference a brief statement was issued to the press reporting that "in particular, recent cost increases experienced by both the Canadian and American mills were examined."

The statement also noted that the meeting was in accordance with the agreement between the Prices Board and the OPA last February, conceding that the $4-a-ton price increase allowed them absorbed only a small portion of the mill's higher costs and was not to prejudice subsequent discussions of a greater price jump. The price advance last February was permitted jointly by the Prices Board and the OPA.

However, the OPA decision to sanction the advance was the most important to Canadian producers, since they sell about three quarters of their output to U. S. publishers. The OPA barred any price increase in 1942 but approved of the $4 jump last February after consultation with the Prices Board, which conducted a survey of increased production costs and recommended to the OPA that relief be given in the shape of an advance in price.

Recent Price Increase Called Inadequate

The Montreal Gazette, in commenting on the conference, said: "Since it was conceded last February that the $4 rise absorbed only part of the higher costs as of that time, and since yesterday's statement referred to 'recent' additional cost increases, the indications would appear to be that some further advance in price would be permitted.

"Officials declined to say what additional price boost had been sought by the mill operators. Canadian producers are now supplying U. S. publishers at the rate of 210,000 tons of newsprint a month. On this basis, a price increase of, say, $5 a ton would mean additional revenue to the Canadian mills of nearly $14,000,000 a year, including the premium on the U. S. Funds received in payment from the American publishers.

"Complicating the newsprint situation is the failure of U. S. publishers so far to reduce their consumption of newsprint by the 10% suggested, but not made compulsory by OPA authorities. At latest reports, the reduction does not amount to more than 4½% to date, and the American publishers are tapping their reserve stocks because of the inability of the Canadian mills to supply more than the 210,000 tons monthly agreed upon.

"The operators here are faced with restrictions on power and shortages of wood and labor. Latest orders from the U. S. called for a total of 240,000 tons per month, to the considerable embarrassment of the mill managements up here.

"The Canadian producers are unable to exceed the agreed total shipment of 210,000 tons but are loath to take on the vexing responsibility of telling their American customers they can only have delivery of part of their orders. Also, the restricted production limit of 210,000 tons is an added argument in favor of a further price increase, since low volume of output naturally means increased costs per ton.

"In their dilemma the Canadian operators are understood to be pressing for firmer control over U. S. publishers' consumption of newsprint, possibly by some sort of compulsory curtailment. Such control would have to be applied by the U. S. War Production Board which has jurisdiction over production and distribution as distinguished from the OPA control over prices.

"There was no representative of the WPB at yesterday's conference here, and as far as is known, there have been no official discussions of this phase of the newsprint picture between the WPB and Canadian authorities."

Paper Mill Strike Problems

The Provincial Government has issued an order-in-council instructing the three-man commission which investigated the causes of a labor dispute at the three Price Brothers' mills in the Lake St. John district to inquire also into the recent strike in the Dolbeau mill of the Lake St. John Power and Paper Company, Ltd. The commission is instructed to report before August 1.

Meanwhile the strike in Price Brothers' mills above referred to has been brought up in the House of Commons at Ottawa where a reply to Frederick Dorion, the member for Charlevois-Saguenay, was tabled stating that no decision had been reached as to whether or not the mills would receive any compensation for the loss of business while shut down.

Paper mills are compensated from a pool fund for reduced production because of war conditions.

The shutdowns were caused by curtailment of power, repairs, holidays and strikes. The River Bend mills were also closed as a result of storm conditions which caused a railway car shortage.

Paper Firms Lease Space at 41 Park Row

Space has been leased at 41 Park Row, New York by the Groveton Paper Company, the Farrington Paper Company and F. W. Beetson, paper; through E. A. Tredwell & Co., Inc. The brokers also leased additional space in the building to the Mills Paper Company.

Paper Market Active and Firm in Chicago

Distributors Finding It Increasingly Difficult to Transact Business Under Low Price Ceilings — Market is Reported Tighter in Almost All Grades — Paper Concerns Affected by New Laws.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., July 6, 1943—Chicago is moving forward with its program of establishing the essentiality of paper with the conviction that now, more than ever, it is necessary to carry on this work. The most recent impetus came from the WPB's recently announced control of all deliveries of all types of pulp which, to the local industry, means that pulp will be available to no one unless its use for strategic war and home front purposes is clearly established.

Meanwhile, price ceilings, according to local jobbers, are becoming more and more difficult to live under with kraft as yet the only paper to feel any readjustment benefits. Manpower and chemical shortages, coupled with the pulp situation, have simply made the market more tight. Demand remains firm and increasing in virtually all lines with backlogs swelling out of sight as allocation programs are carried on. Books and covers are in the same category as are groundwoods and new prints. Waste papers, particularly the better grades, evidenced little indication of real relief from these quarters. The "end use" program, accordingly, became definitely one of the "musts" as the industry moved into mid-summer.

Legislation Affecting Paper Trade

Paper concerns with interests in Illinois have evidenced much attention to the closing days of the Illinois legislative session. Those with manufacturing interests have a year in which to figure out how to give women equal pay with men inasmuch as the State's "Equal Pay for Women" bill passed on the final day. It does not go into effect until July, 1944, but at that time will apply to manufacturers with six or more employees unless court tests destroy the loosely drawn and vague provisions of the measure which the Governor is expected to sign. Other bills passed in the last week included one permitting working of women 54 hours a week with a 10 hour day limitation if such liberalization of existing statutes is approved by the Director of Labor and an advisory board of eight to be appointed. Other bills provide for a top of $20 in weekly benefit payments under unemployment insurance and higher job tax rates for employers with a 150% increase in payroll during the past year. A 75% over all increase in compensation was also granted in the amendments to the Workmen's Compensation Act. The Legislature adjourned on June 30 with the above record and with no new taxes nor stringent restriction on industry other than the above.

Interest Shown in Pulp Conservation

There is considerable local interest in the plan to conserve the dwindling pulp supply as presented to the WPB by the Association of Pulp Consumers, Inc. G. R. Wallace, president of the Association, represented the association as stressing the full importance of using substitute materials and also suggesting that the government agencies make available the manpower, trucks, gasoline, operating supplies and other things necessary to produce and transport an adequate supply of pulpwood for the market and integrated mills. Direction of pulpwood into the most essential channels is a major recommendation of the group which is reported to represent 234 paper and paperboard mills with an annual capacity of 4,745,000 tons of paper and paperboard.

Salesmen Enjoy Holiday

The western division of the Salesmen's Association of the Paper Industry will dispense with its July 5 noon meeting at the Hotel Sherman because of the holiday. Informal round table discussions will be held on July 12 while on July 19 J. T. Meek, executive secretary of the Illinois Federation of Retail Associations, will discuss "Distribution's Dunkirk." The second of the monthly golf outings, according to Herman Berge, golf chairman, will be held at the Sunset Ridge Country Club on Friday, July 23.

To Aid Motor Truck Transportation

Paper concerns operating trucks in Illinois and those in the industry who depend much on trucks for transportation services, will, under legislation approved at Springfield this week, be allowed to extend the length of all trucks to 43 feet for the next two years. The same legislation allows a maximum of 18,000 pounds axle weight for the next two years for all vehicles and allows two-axle vehicles 30,000 pounds gross for two years. The change is made to help the trucking industry to do a better job during war time.

All-Fiber Wartime Can

An all-fiber wartime "can" for talcum, dusting, dental and other powders has been introduced by the American Can Company as a substitute for the prewar metal containers.

The new product, virtually the same size as its peacetime predecessor and equipped with sifter top, is but one of a number of substitute containers designed by Canco to meet wartime metal restrictions. The ridge pressed into the disc top of the can makes for easy opening and tight closing of the sifter.

Like the company's recently announced all-fiber coffee can, the powder containers are compact, sturdy and light in weight, are made and filled on existing equipment, and can be lithographed with the regular labels. The company announced that for the present, production is limited.

Kupfer Bros. Open Boston Office

BOSTON, Mass., July 5, 1943.—Kupfer Bros. Company, manufacterers of coated and fancy papers at Northbridge, Mass., have opened a Boston office at 60 Batterymarch street. William Schwarz is representative. The main office of the company is at 2 Astor Place, New York City.

VICKERY

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Favors a More Constructive Forestry Plan

Canadian Forestry Association Announces Six-Point Program to Provide Better Administration, Utilization and Development of Forest Lands — Importance of Paper is Now Being Publicized.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 6, 1943—All is not well with Canadian forests, according to Canadian Forestry Association, which claims a membership of 10,000. In announcing a "plan of action to fully utilize and perpetuate" them, the association states that forest production represents 20% of Canada's national income from primary products of natural resources and that they net the country $300 millions a year in foreign trade. Only about 2.5% of this, it is claimed, goes for protecting and perpetuating the forest resources of Canada.

Better administration, utilization and development of the forests and forest lands is a national need, according to the association. It points out that forest growth covers 58% of Canada's land area and thus represents this country's most extensive natural resource, 90% of which is publicly owned. Particularly, the association believes, the federal government should play a greater part in forest protection. At present, according to their figures, the federal government is only contributing 0.2% of the 2.0% of annual national income from primary forest products now being spent on protection and perpetuation, the balance of 2.3% being carried by the provinces. "It is generally agreed," says the association, "that the federal authorities have a larger part to play in promoting the welfare of Canada's forest assets. Quite rightly the first move should come from the nine provinces as a united request for financial cooperation."

The association then lists "the federal functions in a combined effort of this kind" as follows:

Lists Government's Functions

1. Advancement of national forest policy, after formuation in harmony with provincial governments.

2. Approval of general working plans, prepared by the provincial authorities and financed in part by federal funds.

3. National research in forest protection, silviculture and forest products.

4. Clearing house for scientific information on forest problems and products, coupled with investigation of progress in other countries.

5. Promotion of energetic marketing on a worldwide scale.

6. Sustained flow of educational material to keep a cooperative public well informed.

Pointing out that industry and the public, as well as governments, have responsibility for forest conservation, the Forestry Association urges calling of a national forest congress "as soon as possible after the close of hostilities and periodically thereafter." Its purpose would be to "crystallize public opinion regarding ways and means of carrying Canada's forest policy into effect on a scale indicated by the needs of the time."

To facilitate such a conference the association offers its services in setting up an organizing committee on which representatives from bodies interested in national forest welfare would be invited to act.

Paper is Being Publicized

Public opinion should become much more conscious of the importance of the paper industry as a result of the very excellent campaign being conducted currently in support of national salvage. Newspapers are carrying, daily, informative facts concerning the part paper plays in the war as well as in peace. Today's release states that through the use of paper (compressed and treated) for packaging purposes, the cheese industry has saved the tin plate that would have gone into the making of 30,000,000 twenty-ounce tin cans, and that paper, now used to make fresh and frozen fish containers, has saved 1,500,000 pounds of tin plate; also, that 9,000,000 pounds of tin plate have been saved for vital war needs by the use of paper for frozen egg containers; 8,000,000 pounds have been saved in the tobacco industry and 2,000,000 in the biscuit industry. "Paper is going to war more directly and more fully than ever before," commented A. A. Stanley, director, national salvage committee, greater Toronto area, today, "and that is why with its war uses increased paper is needed so urgently," he continued, pointing out that paper is not only used in making certain parts for shells and cartridges and for providing protection for shells, small arms, clothing, field charts, etc., but for covering tanks and making equipment for life rafts. "In fact, there's hardly anything used in the war that we don't use boxes or containers for," Mr. Stanley said, "and these are made from paper in various forms. Foodstuffs, however, both for war and civilian use, are packaged only in containers made from virgin pulp."

Collections of Brown Waste Paper

A program for the collection of waste brown paper, bags, corrugated boxes and containers, is discussed in Bulletin No. 404, issued by the Miscellaneous Materials Unit, General Salvage Branch, of the War Production Board, Washington, D. C. This publication covers the types of waste paper stock to be collected, where it is obtainable, how to dispose of it, the establishment of collection areas, etc. It also touches on salvage committee work and how the individual citizen can contribute to the program.

Suggested instructions for local committees on how to collect brown paper are covered in some detail in Bulletin No. 405,. As the WPB has announced that this is a continuing program and not a drive, all interested in cooperating in the salvaging of vital long fiber, should refer to these helpful publications for information on the most effective means of collecting old waste paper stock. At this date the paper salvaging program has been launched in New York and in nineteen other states.

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SAMUEL M. LANGSTON COMPANY, Camden, New Jersey

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending July 3, 1943

STOCKS

	High	Low	Last
A. P. W.	2⅜	2¼	2¼
Armstrong Cork Co.	39¼	38	39¼
Celotex Corp.	14⅜	13⅞	14¼
Celotex Corp., pf.	93	91¾	93
Certain-Teed Products Corp.	7⅛	6¾	6⅞
Certain-Teed Products Corp., pf.	57	56	56¾
Champion Paper & Fibre Co.	22	21½	21¾
Champion Paper & Fibre Co., pf.	104	103	104
Congoleum Nairn Co.	24	23	23¾
Container Corp. of America	23¾	22¾	23⅜
Continental-Diamond Fibre Co.	15⅜	15¼	15¼
Crown-Zellerbach Co.	15⅝	15¼	15⅜
Crown-Zellerbach Co., pf.	95½	93	94½
Dixie Cup Co.	14⅜	14¼	14¾
Dixie Cup Co., —A.	43½	42¾	43
Flintkote Co.	21⅜	20¾	21
Flintkote Co., pf.	105½	103½	105½
Robert Gair	3¼	3⅛	3⅛
Robert Gair, pf.	13¾	13¼	13⅜
International Paper Co.	12½	11¾	12½
International Paper Co., pf.	58¼	56¼	57
Johns-Manville Corp.	86⅝	85	86⅝
Johns-Manville Corp., pf.	....	....	....
Kimberly-Clark Corp.	31⅞	31¾	31⅞
MacAndrews & Forbes	26¾	26¾	26¾
MacAndrews & Forbes, pf.	....	....	....
Masonite Corp.	40½	39	40¼
Mead Corp.	9¾	9⅛	9¼
Mead Corp., pf. A—6%	82	82	82
Mead Corp., pf. B—5½%	72½	72½	72½
Paraffine Companies, Inc.	43	42	43
Paraffine Companies, Inc., pf.	106	104	106
Rayonier, Inc.	15½	14⅞	14⅞
Rayonier, Inc., pf.	30¾	29½	30¼
Ruberoid Co.	26⅝	25¾	26½
Scott Paper Co.	42½	42⅛	42½
Scott Paper Co., pf.	113	113	113
Sutherland Paper Co.	31	30⅛	30¾
Union Bag & Paper Corp.	11⅛	10¾	10⅞
United Paperboard Co.	5½	5¼	5¼
U. S. Gypsum Co.	72¾	71½	72¾
U. S. Gypsum Co., pf.	176	175½	176
West Virginia Pulp & Paper Co.	15¾	15¼	15¼
West Virginia Pulp & Paper Co.	15¾	15¾	14¾
West Virginia Pulp & Paper Co., pf.	108	107	108

BONDS

Abitibi Pulp & Paper Co. 5s '53	....	....	....
Celotex Corp. 4½s '47	101¾	101⅜	101½
Certain-Teed Products Corp. 5½s '48	100	99¼	100
Champion Paper & Fibre Co. 4¾s '50	....	....	....
International Paper Co. 6s '55	107	106	107
International Paper Co. 5s '47	105¼	104¾	104¾
Mead Corp. 3¾s '53	....	....	....
West Virginia Pulp & Paper Co. 3s '54	103½	103½	103½

New York Curb Exchange

High, Low and Last for Week Ending July 3, 1943

STOCKS

	High	Low	Last
American Box Board Co.	7⅛	7⅛	7⅛
Brown Co., pf.	....	....	....
Great Northern Paper Co.	34	33	33¼
Hummel-Ross Fibre Corp.	4⅝	4½	4⅝
National Container Corp.	12	11½	12
St. Regis Paper Co.	4	3⅝	4
St. Regis Paper Co., pf.	130	130	130
Taggart Corp.	4⅜	4⅛	4⅜

BONDS

American Writing Paper Co. 6s '61	94¼	94	94

National Gypsum's Earnings Higher

National Gypsum Company has increased the productive capacity of its plants about 20 per cent in the last two years and this increase will be utilized for civilian products immediately after the war, Melvin H. Baker, president, announced in a statement to stockholders which is being distributed. Several new products which have been developed recently by the company, he said, are expected to be in heavy demand after the war.

Mr. Baker reported net working capital at $6,850,000, up $2,330,000 from a year ago and at a new high and he indicated the possibility that earnings for the first half of 1943 will be slightly higher than for the same period last year.

Stock of Quebec Co. Advances

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 6, 1943—A buying movement has carried the preferred stock of the Quebec Pulp and Paper Cofpany on the Montreal Stock Exchange to around 29-30, an advance of 8 points in the week. One story accounting for this rise—a story frankly labelled street gossip—is that the preferred stockholders protective committee was asked recently by the inspectors in bankruptcy — which in effect means the provincial government—for an estimate on the value of the property. It is said that this valuation worked out at something in excess of $55 a preferred share. Now, observers concede that the possibility of getting such a figure seems at the moment rather remote, but they do make a rather plausible case for something in the neighborhood of $40, which on 70,000 shares of preferred stock would involve a sum of $2,800,000. Such a sum, these observers reason, might well be reached as the aggregate of the corporation's cash, the net proceeds of the settlement with Aluminum re the flooded limits, sale of power rights to price plus certain adjustments with that company, sale of the Chicoutimi plant, etc., all of which might mean that the Provincial Government, which through a statement by the then Minister of Lands and Forests, Hon. Mr. Cote, last October, is committed to "fair treatment" for the preferred shareholders, may not find itself called upon to put much cash on the line from its own till to implement its committment to the Quebec Pulp and Paper Company preferred shareholders.

Hinde & Dauch Make Good Report

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 6, 1943 — The Hinde and Dauche Paper Company of Canada, Ltd., has now retired all outstanding bonded indebtedness and is in its strongest financial position, J. F. Winchell, vice-president and general manager, states in a letter to shareholders. During the second quarter of the current year, tonnage output improved but slightly over those of the first three months, he states. Currently the company is holding the heaviest backlog of orders for some months and indications are that for some time to come the company's facilities should be as fully employed as labor supply will allow, the letter goes on. The unfavorable aspects of the future, he states, are that the present labor supply is inadequate for the fullest operating capacity, that definite deficiencies in supply of some necessary raw materials are being felt and that costs continue to rise.

Abitibi Earns $8,749,392

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 6, 1943—Abitibi Power and Paper Company and its wholly owned subsidiaries, in 1942, earned operating profits of $8,749,392, according to the annual report of the receiver and manager, just released. This compares with with $10,126,499 in 1941. The amount provided for depreciation was $4,500,000 and bond interest for the year, including interest on overdue interest, amounted to $3,166,994. Reserve for the premium on United States funds, if

needed when payment is made, was allowed of $348,-369, and reserve for interest on premium, if any, was provided of $53,315, while reserve for income and excess profits taxes was $350,000, leaving a balance applicable in reduction of the deficit from operations in the receivership period of $330,714.

Balance sheet figures reveal a strengthened working position, net working capital appearing at $24,735,-272, against $22,472,889 at the end of the previous year. Current assets appear at $27,284,572, against $24,273,797 and current liabilities at $2,549,299, compared with $1,800,908.

The report shows bonds outstanding at the end of 1942 totalling $37,165,590, compared with $41,992,-290 the year before. Interest accrued, including interest upon overdue interest, is booked at $33,269,644, and is carried in the Secretary's balance sheet for the first time.

Walter B. Merlin Retires

On June 30, sixty years after he first entered the employ of Hollingsworth & Whitney Company, Walter B. Merlin retired from active service, but will continue in a consulting capacity. Mr. Merlin has resigned as vice-president and manager of sales. He has also resigned as a member of the executive committee of the board of directors but will continue as a member of the board.

James L. Madden, vice-president, is to be manager of sales, and will be in charge of all sales offices and sales personnel. Robert Nivison has been elected to the executive committee to fill the place left vacant by Mr. Merlin. The executive committee, as now constituted, is made up of M. L. Madden, H. C. Thayer, J. L. Madden, Robert Nivison, and L. G. Glazier.

At the June meeting of the board of directors of the company in Boston, resolutions were passed voicing the high esteem in which Mr. Merlin is held by all of the stockholders and employees of the company, citing his active participation in the substantial and continued growth of the company's business over the last three score years, and wishing him a well-earned rest.

At a testimonial luncheon at the Parker House in Boston tendered to Mr. Merlin by his fellow directors, he was presented with a platinum watch and chain.

C. V. Travis to be N. E. Manager

BOSTON, Mass., July 5, 1943—Clayton V. Travis has been appointed New England manager of the Whitlock Cordage Company, 226 State Street, succeeding Norman Holbrook, who had held that position for a number of years. Mr. Travis, originally a New England man, has been with General Motors thirteen years in the Acceptance Corporation, financing and sales. He has travelled extensively in the United States in connection with his work, but for eight years he was most of the time in Buffalo, N. Y., where he had his headquarters.

Correction

The item in the PAPER TRADE JOURNAL of July 1, headed, "Denies I. P. Merger Appeal," was incorrect as this matter had nothing to do with International Paper Company, but referred to the properties of the International Hydro Electric System.

There can be no quality paper without quality wire
"The diagram at the left indicates the actual position of the wire in the box. It is made to assist you in placing the wire on the machine."
TOP SHOULD RUN THUS
1
2
3

Yes, we want our "package" to impress you favorably. Every box is kept newly painted. That will look well, of course. More than that, a fresh coat of paint helps waterproof the lumber. Our steel winding cores are coated with high grade lacquer. That looks well, too, but, more than that, it keeps rust and grease from injuring the wire. Thus every Lindsay wire travels in a strong, dry box, amply protected from untoward experiences . . . With every wire is enclosed a diagram like the one above to assist you in placing the wire on your machine. The diagram above is one of many which show how to unroll different types of wires. We believe that the precautions we take and those we suggest to you will aid you in securing better results from your purchases of Lindsay wire cloth.

THE LINDSAY WIRE WEAVING COMPANY

Serving the Paper Industry Since 1903

14001-14299 ASPINWALL AVE. • CLEVELAND, OHIO

Government Paper Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 7, 1943.—The Marquette Paper Company has been awarded the contract for furnishing the Government Printing Office with 646,625 pounds of white offset book paper at 7.5 cents. Other paper awards recently announced include the following.

Paper Corporation of the U. S. will furnish 8,625 pounds of 100% rag white ledger paper at 21.96 cents and the Frank Parsons Paper Company will furnish 210,000 pounds of white offset book paper at 9.26 cents. R. P. Andrews Company will furnish 104,040 pounds of sterling coated cover paper at 9.2 cents and the same firm will also furnish 720,000 pounds of machine coated book paper at 6.25 cents.

The Mudge Paper Company will furnish 75,600 pounds of drum head manila paper at 17.75 cents and the R. P. Andrews Paper Company will furnish 12,168 pounds of green safety paper at 18.5 cents, The Marquette Paper Company will furnish 42,720 pounds of white offset book paper at 8.9 cents.

The Paper Corporation of U. S. will furnish 5,500 sheets of 100% rag white ledger paper at $26.50 per M sheets and Wilcox Walter Furlong Paper Company will furnish 1,000,000 pounds of chemical wood manila paper at 5.1 cents. R. P. Andrews will furnish 115,000 pounds of tan sulphite bristol cover at 8.9 cents. Barton, Duer & Koch Paper Company will furnish 100,000 pounds of chemical wood white writing paper at 7.25 cents and P. H. Gladfelter Company will furnish 60,000 pounds of white writing paper at 7.75 cents and Beach & Arthur Paper Company will furnish 190,000 pounds of white writing paper at 7.75 cents. Marquette Paper Company will furnish 816,000 pounds of white supercalendered book paper at 7.14 cents.

Walker Goulard Plehn Company will furnish 52,000 pounds of 100% rag, white index paper at 24.25 cents and Paper Corporation of U. S. will furnish 85,495 pounds of white antique finish offset book paper at 7.9 cents. Walker Goulard Plehn Company will furnish 15,500 pounds of 100% rag white index paper at 24.25 cents, the same firm will also furnish 5,250 pounds of the same at the same price and 6,920 pounds at the same price also. Frank Parsons Paper Company will furnish 46,422 pounds of green sulphite manifold paper at 10.35 cents and R. P. Andrews Paper Company will furnish 19,200 pounds of antique finish dawn cover at 8.41 cents.

Walker Goulard Plehn Company will furnish 58,000 pounds of 25% rag, white ledger paper at 15.5 cents. Marquette Paper Company will furnish 263,151 pounds of white sulphite writing paper at 7.3 cents and the same firm will also furnish 106,560 pounds of same at the same price. Marquette Company will also furnish 213,000 pounds of white groundwood writing paper at 6.80 cents and 175,000 pounds of 50% rag, groundwood writing paper at 5.75 cents.

Cauthorne Paper Company will furnish 96,000 pounds of No. 2 kraft wrapping paper at 4.85 cents and the Marquette Paper Company will furnish 57,500 pounds of light weight machine finish book paper at 8.32 cents. Barton Duer & Koch Paper Company will furnish 25,000 sheets of brown cloth lined paper at $155.96 per M sheets. Eastern Corporation will furnish 36,000 pounds of white chemical wood bond paper at 81.98 cents, and the Central Ohio Paper Company will furnish 116,000 pounds of white offset book paper at $7.79 per cwt.

Resolute Paper Products Corporation will furnish 269,250 pounds of white chemical wood writing paper at 7.54 cents and Walker Goulard Plehn Company will furnish 23,600 sheets of white coated one side paper at $43.40 per M sheets; 6.050 sheets of same at $86.80 per M sheets and 8,400 sheets of same at $77.50 per M sheets.

Cauthorne Paper Company will furnish 45,568 pounds of 25% rag yellow bond paper at 13.9 cents and D. L. Ward Company will furnish 21,434 pounds of white chemical wood writing paper at 7.46 cents. Wilcox Walter Furlong Paper Company will furnish 120,000 pounds of 25% rag, white bond paper at 14.25 cents and R. P. Andrews Paper Company will furnish 12,390 pounds of white recording chart paper at 34.5 cents.

Prohibit Hand Cartons

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 5, 1943—Manufacture of cartons used to carry soft drinks has been prohibited by the War Production Board to save paperboard for use by the fighting forces and lend-lease and for packaging food for civilians.

The amended order, L-239, also imposes restrictions for the first time on the use of solid and filled kraft paperboard in the manufacture of boxes. It likewise restricts the manufacture of wrappers for cigarette packages, cigarette cartons, boxes for certain apparel accessories and for rubber heels, and revises retail box quotas and general exceptions to the order to alleviate inventory problems.

The manufacture of any specialty paper bag, designed to be used as a bottle carry-out bag, is prohibited simultaneously under Limitation Order L-304. Not included in this definition are paper shipping sacks and growers' variety bags made in accordance with specifications of Limitation Order L-261.

Meredith Fox Montague Resolutions

With feelings of profound regret the board of directors of Standard Paper Manufacturing Company, Richmond, Va., records the passing of MEREDITH FOX MONTAGUE, who died May 10, 1943.

Mr. Montague came with the company in the first year of its operation, and was greatly instrumental in shaping its sales policy and the introduction of its product to the trade. He was for more than a quarter of a century located in New York, from which city he covered a large part of the United States and Canada.

He was widely known and loved for his genial, kindly personality, and his rare wit, culture and refinement. Although in retirement for several years before his demise, he will be fondly recalled in memory by hosts of his friends in all parts of the country, and his associates in business take this means of expressing their great sorrow at his passing away.

Must Revise Forest Policy

British Columbia's forest policy, laid down at the time when a 300-year supply of mature timber seemed assured, must be revised to meet a changing situation, C. D. Orchard, British Columbia's chief forester, said in an address at Vancouver recently. He warned that failure to revise the forest policy would mean a loss of 40c in every dollar of B. C.'s revenue which the forest industries contribute.

"It would be tragic," Mr. Orchard said, "if in the lifetime of one man we accomplished the transition from unlimited forests without markets to unlimited markets without forests."

The chief forester offered figures to show that only one-eighteenth of B. C.'s total area remains inaccessible, marketable timber—trees 500 to 1000 years old.

"What are we going to do with timber only 100 years old?" asked Mr. Orchard. "I don't know. But I do know that unless the whole course of history is turned topsy-turvy overnight, we are going to have a use of it, because we are entering on an era of wood development which will stagger the imagination.

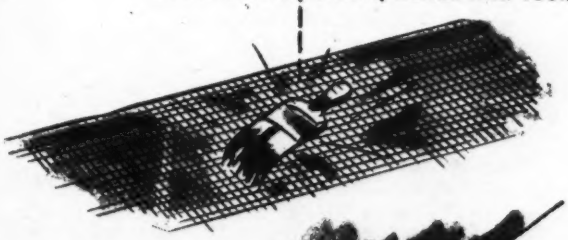
"More than any other raw material, wood can be used outside of its ordinary uses. Instead of timber we shall be shipping out cellulose and plastics, and British Columbia, which obtains 40 per cent of its livelihood from our forest resources, will still have it."

The estimate made it plain that industry and forest management must work together if this natural asset were to remain a major revenue producer. "Our real resources today are not the 1000-year stands available but the productive capacity of the forest soil," said Mr. Orchard.

In consequence, the new forest policy would call for a switch-over during the next 30 or 40 years from the diminishing stands of ancient trees to timber 50 to 100 years old. If such a change can be accomplished, no fear need be held for the future of the woods industries.

"Frankly, I don't know what we'll be making 50 years from now, or for what markets," Mr. Orchard said. "But I know that if we have the timber, we're going to have a use for it. Volume of forest products passing through Vancouver will go down, he predicted, but value will go up as B. C. moves into "an era of timber development which would stagger our wildest dreams. We do not want to move from unlimited forests without markets to unlimited markets without forests."

One fellow
on the maint'nance crew
was new around a mill.
If he hadn't been so careless, he'd be working for them still.
But while slung above the wet end —
slapping on a coat of paint —
He dropped the brush. The way to treat a wire? No, it ain't!
So they dragged him to the winders
and they tossed him on the sheet,
And the wind-up was, he wound up
head and shoulders, hands and feet.



Wires are made of vital materials by highly skilled craftsmen . . . both increasingly scarce. But when your trained crews treat them with care, you'll find your Cheney Bigelow Wires will deliver all the fine service you've come to expect of them . . . *because we're keeping our standards up, keeping our experienced workers on the job.* Though an important percentage of our production now goes directly into military items, we're *also going right on* with research and manufacture of Fourdrinier wires and other mill equipment . . . with full government approval, for paper, too, is a weapon.

CHENEY BIGELOW

Fourdrinier Wires · · Dandys · · Cylinders · · Wire Cloth

CHENEY BIGELOW WIRE WORKS · 417 LIBERTY STREET · SPRINGFIELD, MASS.

Paper Men Appointed by OPA

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 7, 1943—Fourteen executives have accepted appointment by the Office of Price Administration to serve on its newly-created Paperboard Industry Advisory Committee, which will consult with the Paper and Paper Products Branch on future pricing and other problems affecting the industry, OPA announced today.

Membership of this committee has been recruited from representative paperboard concerns, located in all parts of the country, exclusive of manufacturers of Fourdrinier Kraft and specialty paperboards.

At its first meeting with officials of OPA in Washington on June 25, the committee elected G. G. Otto its permanent chairman, and W. J. Alford, Jr., vice-chairman.

Members of the committee are as follows:

J. J. Brossard, vice-president of Container Corporation of America, Washington, D. C.

F. S. Wakeman, vice-president of Ohio Boxboard Company, Rittman, Ohio.

George E. Dyke, president of Robert Gair Company, New York.

G. G. Otto, vice-president of Alton Box Board Company, Alton, Ill.

Fred B. Zartman, president of Franklin Board and Paper Company, Franklin, Ohio.

W. Irving Osborne, Jr., president of Cornell Wood Products Company, Chicago, Ill.

W. J. Alford, Jr., president of Continental Paper Company, Ridgefield Park, N. J.

P. A. Schilling, president of Waldorf Paper Products Company, St. Paul, Minn.

C. E. Carey, vice-president of Central Fibre Products Company, Chicago, Ill.

H. D. Schmidt, president of Schmidt and Ault Paper Company, York, Pa.

Newton Cuneo, general manager of Ontonagon Fibre Corporation, Ontonagon, Mich.

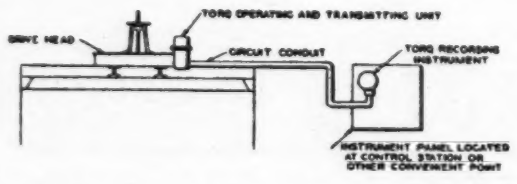
S. J. Newcomer, vice-president of Consolidated Paper Company, Monroe, Mich.

Allan Goldsmith, vice-president of Mead Corporation, Chillicothe, Ohio.

David Newman, president of Phil-Fibre Box Board Mills, Inc., Philadelphia, Pa.

The Dorr Torq Recorder

To provide an accurate continuous record of Thickener operation, the Dorr Torq Recorder has been developed by The Dorr Company of New York. Designed for use on Dorr "A" Thickeners equipped with a standard overload alarm, it is particularly applicable where appreciable fluctuations in the drive unit load are caused by variations in solids accumulation in the thickener. The Recorder can be installed on Type "A" thickeners now in use as well as on new units.


TORQ OPERATING AND TRANSMITTING UNIT
DRIVE HEAD
CIRCUIT CONDUIT
TORQ RECORDING INSTRUMENT
INSTRUMENT PANEL LOCATED AT CONTROL STATION OR OTHER CONVENIENT POINT

THE DORR TORQ RECORDER FOR TYPE A THICKENER

The Torq Recorder consists of two electrically connected control parts—the transmitting unit and the recording unit. The transmitting unit is built into the standard overload alarm on the drive head, while the recording unit can be located at the control station or any convenient point offering easy access to the operator.

As the load develops in the thickener, the impulse is carried directly to the transmitting unit from the overload alarm mechanism. The transmitting unit in turn carries the impulse to the recording unit, where it is transcribed upon a calibrated 24 hour chart, 12 inches in diameter.

All variations are continuously recorded in this manner—providing a complete record of thickener operation for each 24-hour period.

In addition to the obvious advantages of having the complete operating history of the thickener available for analysis in the event of difficult operation, the Torq Recorder provides valuable help in obtaining maximum results as well. As the recorder will indicate the gradual accumulation of solids, the operator will be able to avoid troublesome overloads or temporary shutdowns by speeding up the pump discharge. The operator will also find it an easy matter to obtain maximum density in the underflow by regulating the speed or stroke of the pump, without any danger of serious overloads developing.

Reasonable attention to the record of operation precludes any chance of an overload developing that would be serious enough to cause the standard overload alarm to cut the motor.

Nevertheless, double protection is afforded by the fact that the standard over-load alarm and cut-out arrangements are not affected by the application of the recording instrument.

Dividends from Power Plant

"Dividends From Your Power Plant" is the title of a 48-page booklet written for executives in the language of executives so that managers without extensive engineering training can understand the principles governing the economical operation of steam-generating equipment. The booklet discusses subjects such as: the dollars and cents importance of boiler efficiency, the relation between steam costs and profits, natural versus mechanical draft, carbon dioxide and carbon monoxide, excess air, and factors that govern labor costs in the boiler room. The text is pointed up with examples, tables and sketches to make each topic clear.

It is not a sales bulletin in the sense that is describes any particular make of product or apparatus. It is being distributed by Preferred Utilities Company as a service to boiler owners. The Company hopes that it will help to reduce steam costs and to realize the benefits of more reliable operation of boiler room equipment. This, it is pointed out, is particularly important during this period. Management is faced with the complex problem of maintaining equipment in continuous service at peak capacity. Repair parts are difficult, if possible, to get. Skilled operators are becoming increasingly scarce and mounting taxes emphasize the importance of taking advantage of every means of reducing operating expenses.

Copies of this publication may be had without charge by writing Preferred Utilities Company, Inc., 33 West 60th street, New York City.

WPB ORDERS NEWSPRINT CUT

(Continued from page 7)

Information Is Required in Appeal Cases

In all such appeal cases, however, the following information is required:

A. Amount of print paper used during the third quarter of 1941 in printing net paid circulation only. It should be noted that this is not total consumption and should not include any print paper used for unpaid distribution, spoiled copies, production waste, etc. Add 3 % for production waste to the net paid circulation tonnage. If the resulting figure is 500 tons or more, deduct 5%; if it is less than 500 tons, deduct 5% of the amount in excess of 25 tons. This should be the allowable quota of print paper for the quarter, and publishers are requested to show separately the net paid tonnage, the 3% for production waste and the deduction of the further 5% reduction.

B. Estimate, in specific number of tons, the minimum requirements for the third quarter of 1943.

All the following additional information sought is for the third quarter of 1941 and the second quarter of 1943. Figures for morning, evening or Sunday, should be listed separately, except item one, below.

1. Gross tons or pounds of print paper used per month, whether in publisher's plant or used for supplements produced for the publisher by others. This figure must include all production waste and damage in transit waste, unless compensation has been received from the transportation companies for the damaged paper. Do not include paper used in commercial printing or in printing other publications.
2. Net press run averages by months and the quarterly averages.
3. Net paid circulation averages by months, according to ABC standards, and the quarterly averages.
4. Per cent of difference between net press run and net paid circulation for each quarter.
5. Average number of pages per issue each month, including all supplements.
6. Number of issues each month.
7. Total number of lines or inches of paid advertising per month.
8. Total number of lines or inches of unpaid content per month.

Publishers are asked to state in detail whether anticipated conservation measures have been accomplished.

If additional tonnage for the third quarter of 1943 is requested, and if no previous appeal for additional tonnage has been granted, specimen copies of the newspaper should be submitted, together with a description of methods and plans devised to conserve print paper to offset increased requirements.

The appeal must be filed in triplicate and addressed to: War Production Board, Printing and Publishing Division, Washington, D. C. Ref. L-240.

Paper Men in Graphic Arts Institute

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 5, 1943—Arthur V. Howland, vice-president, secretary and assistant treasurer of Tileston & Hollingsworth Company, was elected a member of the budget committee of the Graphic Arts Institute of Massachusetts, Incorporated, at the annual meeting held at the Parker House. William H. Walpole, assistant treasurer, of Rutter & McNaught, Inc., was elected chairman and director of the Fine Paper Division.

Wm. Kirn Buys Claremont Paper Co.

CLAREMONT, N. H., July 6, 1943—The Claremont Paper Company, Inc., owned since 1918 by the Brompton Pulp and Paper Company, Ltd., of East Angus, P. Q., has been purchased from the corporation by William A. Kirn of Claremont.

It has been announced that the new owner intends to make no shift in policy, and that no changes in personnel are contemplated. New officers of the company were announced as follows: William A. Kirn, president and treasurer; George P. Tenney, vice president; Miss Sarah E. Warren, secretary. Directors will be Mr. Kirn, Mr. Tenney and Dudley W. Orr, corporation lawyer for the company.

Markets After the War

Markets After the War, published by the U. S. Department of Commerce is a study of post-war opportunity for American business, and provides a practical foundation to enable business men to plan for the future. It is confined largely to the discussion of domestic markets. The contents include the need for planning by business, the impact of the war on post-war markets, and there is included a discussion of the danger of simultaneous boom and depression.

In the concluding part devoted to market analysis for the post-war period, the basis for planning production by commodity groups, the need for better markets and how well a high national output affects sales, are clearly analyzed.

Homestead Valve Awarded Gold Star

. The U. S. Maritime Commission has again honored the men and women of Homestead Valve Manufacturing Company, Coraopolis, Pa., by awarding a gold star for their Maritime "M" pennant, signifying continued outstanding achievement in the production of vital war products. Originally granted the Maritime Commission's highest award in November, 1942, this additional honor was conferred by Admiral H. L. Vickery, by telegram to W. R. Schuchman, president of the company.

To Proceed with Catalogues

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 5, 1943. — The fine paper trade of Boston, after a study of the price regulation in PR400, are preparing to make such few changes in their prices as may be necessary, effective at an early date. A good many who have been waiting now feel that they can proceed with their catalogues. The trade is holding up a little bit better than usual at this time of year, as customers feel that they may not be able to secure merchandise later for some time.

Effect Gaylord Stock Distribution

Lehman Brothers and Hemphill, Noyes & Co., jointly, effected last week a secondary distribution of 30,000 common shares of Gaylord Container Corporation stock at 14, less a commission to members of the National Association of Securities Dealers of 50 cents a share. The New York Stock Exchange approved member and member firm participation in the secondary.

PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.
Henry J. Berger
EDITOR

Vol. 117 July 8, 1943 No. 2

COMING EVENTS IN PAPER INDUSTRY

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Fall Meeting, Palmer House, Chicago, September 21-24, 1943.

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

LABOR POLICY

The labor policy of the Administration has been long criticized on various points. Politics is, of course, inseparable from it. From its inception to the present complex and confused state, the government's labor policy has worked inequitably in many cases, regardless of what its sponsors or those who administer it may have otherwise planned. The foundation of this policy was laid in the National Labor Relations Act, otherwise known as the Wagner Act. This piece of legislation granted much to organized labor and exacted no adequate responsibilities, while it limited and restricted the activities of management and frequently acted in anything but an impartial manner. Industrial progress, unfortunately, has always been accompanied by disputes, strikes and frequently by violent clashes between labor and management, and this new labor set-up has not checked it. Both parties have, of course, made serious mistakes. With the creation of the National Labor Relations Board, this conflict was expected to be resolved into a better and more cooperative association between those two essential forces. By the record established by the Labor Board, it appears clear that the Board in many cases has not only not been impartial but has often acted with definite bias in favor of labor and unfairly harsh against the employer. The record of the Labor Board decisions in the settlement of strikes and disputes, it has been stated, appears to be one of compromise in favor of labor. When labor asks for much the Board grants at least something and labor takes what it can get. When the Labor Board endeavored to "hold the line" order issued by President Roosevelt to curb inflation, and refused labor's demands, the damaging coal strike followed.

The enactment of the anti-strike bill over the President's veto can and should mark the first step in a thoroughgoing revision of government's labor policy, states the Guaranty Trust Company of New York in discussing labor and the war in the current issue of *The Guaranty Survey*, its monthly review of business and financial conditions. "The new act was hastily drafted at a time when public opinion was aroused by the action of the coal miners' representatives in calling three nation-wide strikes within two months in plain defiance of the President and the War Labor Board and in clear violation of labor's pledge to renounce the right to strike for the duration of the war," *The Survey* continues. "Despite its faults, the law provides the basis for a national labor policy conforming to the needs of wartime. It places at the disposal of the government the means of assuring the uninterrupted operation of production facilities affected by labor disturbances. Its provisions go far toward settling the broader issues involved in the contest between government and the representatives of the miners."

In commenting on the strike situation in 1942, *The Survey* says in part that "the number of strikes in 1942 was only about one-fourth of the average for the preceding five years. On the basis of relative populations, the record compares well with that in Great Britain, where strikes have been outlawed for the duration of the war but have nevertheless continued to occur. This record is a tribute to the patriotism and public spirit of the large majority in the ranks of American labor."

In declaring that a new labor policy is needed *The Survey* goes on to say that, "Radical changes in labor conditions and requirements due to the war point with increasing insistence to the need for revision of public policy along several lines. The coal crisis emphasizes the urgency of this need. Such an overhauling would have no necessary connection with the long-term social objectives at which public policy is aimed. It would be purely an emergency measure, designed to secure what is unanimously sought—maximum utilization of the nation's industrial resources in the prosecution of the war . . . A first logical step in policy revision would be to give definite expression to the principle that the suspension of operations in vital war industries cannot and will not be tolerated. Actual seizure of plants by the government on several occasions has shown that this is the case. The anti-strike law marks an important stetp toward the open avowal of this essential principle. It is difficult to understand, however, why it should be necessary for the government to allow a dispute to reach the strike stage, and then to go through the formality of 'seizing' the plant, in order to make it clear that no stoppage will be permitted. It would be more realistic and candid, and probably more conducive to industrial peace, to lay down the rule at the beginning that war production must continue under any conditions and that compliance can remain 'vol-

untary' as long as it continues to be compliance, but no longer. Such a system would, of course, require an arbitration board with full statutory powers and with a personnel and organization capable of handling promptly any volume of business that might come before it. In this respect, also, the anti-strike law makes a good beginning by broadening the authority of the National War Labor Board, giving it, among other powers, that of subpoenaing witnesses and records."

In its conclusion *The Survey* suggests that, "In justice to labor, as well as to the war economy in general, the policy would require a more adequate price-control mechanism than now exists. Stabilization of farm prices should be recognized as indispensable to control over the cost of living. And fiscal policy should be fully enlisted in the program, since no system of direct price control can safely be relied upon to hold prices steady unless accompanied by a stabilization of purchasing power."

Osborne Co. Buys Fox Machines

The Osborne Paper Mill Equipment Company, Fulton, N. Y., has purchasd the two paper machines and all auxiliary equipment in paper mill belonging to W. H. Fox & Sons, Inc., located at Penn Yan, N. Y., and expects to dismantle all serviceable machines for resale. This mill was in operation until June of this year and was closed due to the dam's being washed out which left the plant without sufficient power to operate.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1943		Corresponding Weeks—1942	
May 22	92.2	May 23	93.9
May 29	92.7	May 30	91.4
June 5	85.5	June 6	90.2
(Includes Memorial Day)		(Includes Memorial Day)	
June 12	88.3	June 13	88.4
June 19	87.5	June 20	86.5
June 26	*88.1*	June 27	84.5

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1942	104.5	103.9	102.9	100.4	95.3	87.4	75.8
1943	87.2	88.8	89.5	88.7	*91.6*	....	....

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1942	80.8	82.8	90.6	86.9	80.1	90.4
1943	....	....	....	....	....	....

COMPARATIVE YEARLY SUMMARIES

	1936	1937	1938	1939	1940	1941	1942	1943
Year to Date..	78.2	89.1	67.4	79.5	87.0	93.5	99.1	*88.9*
Year Average..	80.4	79.8	71.5	83.4	85.6	97.4	90.4	....

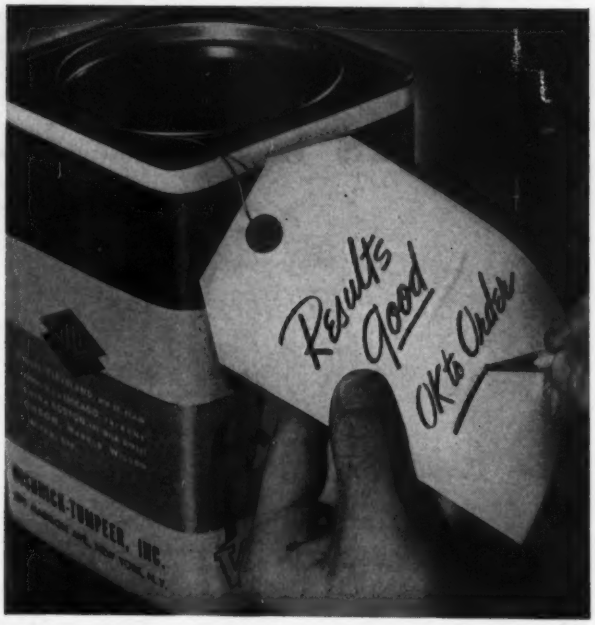
* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1937	83	89	89	91	88	80	69	77	72	70	57	47	75
1938	56	63	63	60	60	59	59	60	70	73	67	61	64
1939	65	73	76	74	69	73	68	77	82	91	88	77	77
1940	78	75	74	76	82	85	77	79	78	85	82	77	78
1941	81	88	89	89	91	94	92	98	95	99	98	90	92
1942	102	101	101	95	82	72	68	75	76	81	82	77	84
1943	86	88	94	94	96	..	..	..	..	..	..	..	..

Week ending May 22, 1943—96
Week ending May 29, 1943—95
Week ending June 5, 1943—92
Week ending June 12, 1943—97
Week ending June 19, 1943—95
Week ending June 26, 1943—96

† Per cents of operations based on "Inch-Hours" reported to the National Paperboard Assn.



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Section of the
TECHNICAL ASSOCIATION
OF THE PULP & PAPER INDUSTRY

Edited by R. G. Macdonald, Secretary

The Effect of Sodium Thiosulphate in the Sodium Sulphite Pulping Process

By Kenneth A. Kobe[1] and John M. Hanson[2]

Abstract

The strength properties of hemlock pulp prepared by the sodium sulphite process are improved by the addition of sodium thiosulphate.

The bleachability is lowered by the addition of thiosulphate, but could be improved by longer cooking.

Because sodium thiosulphate is not harmful in amounts greatly in excess of those previously specified, its formation during chemical regeneration is not harmful.

In an earlier paper Haffner and Kobe *(5)* described a modified sodium sulphite pulping process which produced a pulp of superior physical properties from Douglas fir, hemlock, and other woods. Previous workers with the sodium sulphite process found that their recovery processes gave some sodium thiosulphate which accumulated in the liquor and gave poor pulp. The statement is made *(3, 4)* that when the sodium as sodium thiosulphate exceeds 5% of the total sodium, the resulting pulp has a lower strength and higher bleach requirement.

One experiment by Haffner and Kobe *(6)* in which 0.1 mole per liter of sodium thiosulphate (equivalent to about 8% by weight of chemicals present) was added showed no deterioration of the pulp. Aronovsky and Gortner *(1)* proved sodium thiosulphate to be a strong pulping agent. Bradley and McKeefe *(2)* obtained a strong, though dark, pulp when sodium thiosulphate was the sole pulping agent. However, if the sodium thiosulphate was present in small quantities and sufficient sodium sulphite present, an easy bleaching pulp was obtained.

[1] Professor of Chemical Engineering, University of Texas, Austin, Texas.
[2] University of Washington, Seattle, Wash.

It was the purpose of this work to determine the effect of a wide range of sodium thiosulphate concentrations in the sodium sulphite process.

Cooking Equipment and Liquor

The digester used was the 25-liter rotating digester used previously by Haffner and Kobe *(5, 6)*. The chips were western hemlock (received from the Soundview Pulp Co., Everett, Washington) as used by the mill, except that a preliminary air drying was carried out. No distinction was made between heartwood and sapwood. The conditions used were those previously found optimum for the sodium sulphite process. These are:

2 kg. moisture-free wood per 8 liters liquor
1.38 moles Na_2O per liter sulphited to a pH of 9.4
Pulping temperature 370° F.

The pulping liquor was prepared by dissolving 1987 grams of sodium hydroxide in 18 liters of solution (equivalent to 1.38 moles per liter) and passing in SO_2 until the pH was 9.4 as determined by a Hellige pH control set using phenolphthalein as the indicator. In the runs in which thiosulphate was added, the calculated amount was added to give the desired percentage of the total chemical (sodium sulphite plus thiosulphate) by weight. Thus, the added thiosulphate was superimposed on the regular quantity of sodium sulphite.

Usual practice was to bring the digester charge to 370° F. as rapidly as possible, which required 2¾ hours. This was followed by 3¾ hours at 370° F. to give a total cooking time of 6½ hours.

The results are given in Table I. The data from runs 7 and 8 are averaged to give the values for no thiosulphate. The data are plotted in Fig. 1 to show the effect of added sodium thiosulphate. The curves

TABLE I.—EFFECT OF SODIUM THIOSULPHATE ON SODIUM SULPHITE PULP

Condition: All liquor contains 1.38 moles Na_2O/ liter sulphited to a pH of 9.4 plus added $Na_2S_2O_3$; 2.0 kg. moisture-free chips used and 8 liters of liquor used in each run; temperature of cook 370° F.

Run No.	Total Time, hr. and min.	Time on Temp., hr. and min.	Initial Values			Values at Max. Burst			Chlorine Number
			Burst	Tear	Freeness	Burst	Tear	Freeness	
7	6-30	3-45	50	203	690	125	83	125	5.08
8	6-30	3-45	37	242	710	113	80	100	5.50
Ave. of 7 & 8	6-30	3-45	43.5	222.5	700	119	81.5	112.5	5.29
9	6-30	3-45	42	253	725	120	82	130	6.40
10	6-30	3-45	38	244	725	124	87	85	6.16
11	6-30	3-45	43	245	725	118	91	140	5.99
12	6-30	3-45	49	257	715	126	93	240	7.42
13	6-45	4-00	53	266	715	145	85	115	6.51
14	6-30	3-45	55	250	705	136	89	165	6.79
15	6-30	3-45	67	272	700	155	103	170	7.66
16	6-30	3-45	Badly burned			Discarded			

show initial and maximum bursting strength, initial tear and tear at maximum burst, and bleachability as chlorine number.

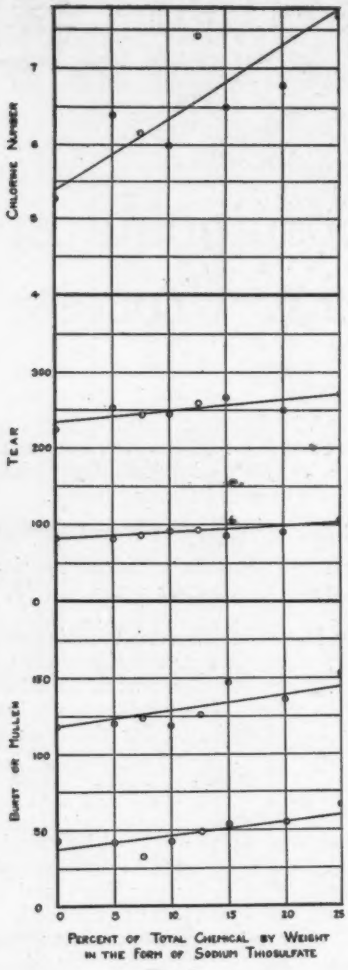


FIG. 1

Strength Properties

The curves show definite changes in the pulp characteristics with increasing amounts of sodium thiosulphate in the pulping liquor: (1) the bursting strength both before and after heating shows a marked improvement, (2) the tear shows a slight increase, (3) the bleach requirement shows a decided increase with thiosulphate present.

In the tests made with lower thiosulphate concentrations the chlorine number could be lowered easily by additional cooking or by longer cooking at a lower temperature. The use of lower temperatures would not cause lowered strength for better bleachability.

Acknowledgment

We wish to thank Eric Ericcson and the laboratory staff of the Puget Sound Pulp and Timber Company, Bellingham, Washington, for running all physical tests reported on these pulp samples.

Literature Cited

1. Aronovsky and Gortner, *Ind. Eng. Chem.* 25: 1260-5 (1933).
2. Bradley and McKeefe, *Paper Trade J.* 88, No. 8:131-3 (Feb. 21, 1929).
3. Clark, *Paper Trade J.* 83, No. 22:43-5 (Nov. 25,1926).
4. Drewsen, *Paper Trade J.* 83, No. 24:41-2 (Dec. 9, 1926).
5. Haffner and Kobe, *Paper Trade J.* 111, No. 9:93-8 (Aug. 29, 1940).
6. Haffner and Kobe, *Paper Trade J.* 112, No. 24:27-8 (June 12, 1941).
7. Hausen, *Paper Trade J.* 84, No. 9:51-60 (March 3, 1927).

Water Vapor Permeability Test Discussed

A considerable amount of data relative to the water vapor permeability of paper, alone and in combination, at high humidities, have appeared in the trade literature in the past few months. Since no accepted procedure exists for making these tests the results reported have been of somewhat questionable value, although the permissible error has given these data some comparative value.

To meet this situation and to prepare for the necessary work needed to be done to establish a satisfactory test, a group of technical men sponsored by TAPPI met at the Palmer House on Tuesday, June 29th, to discuss the subject. As a result, a program of work has been laid out that will probably bring about a solution of the problem by the time that the Technical Association of the Pulp and Paper Industry meets (September 21-24, 1943) at the Palmer House in Chicago.

Those present included:

R. P. Bigger, and T. E. Dobbins, American Can Company, Maywood, Ill., G. J. Brabender, Marathon Paper Mills, Rothschild, Wis., Maj. James d'A. Clark, Maj. Robert Melson, and Lt. Couch of the Chicago Quartermaster Depot, G. F. Des Autels, Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich., C. E. Fawkes, Pyroxylin Products Company, Chicago, Iil., W. H. Graebner, Menasha Products Company., Menasha, Wis., J. F. Halladay, American Coating Mills, Elkhart, Ind., Frederick Hanmer, Quartermaster Generals Office, Washington, D. C., C. E. Hrubesky, Forest Products Laboratory, Madison, Wis., F. S. Leinbach, War Production Board, Containers Div., Washington, D. C., F. D. Long, Container Corporation of America, Chicago, Ill., Peter J. Massey, H. P. Smith Paper Company, Chicago, Ill., E. G. Mullen, Scutan Div., Union Bag and Paper Corp., Hudson Falls, N. Y., F. F. Newkirk, Sisalkraft Company, Attleboro, Mass., C. E. Southwick, Shellmar Products Company, Mt. Vernon, Ohio, C. G. Weber, National Bureau of Standards, Washington, D. C., and R. G. Macdonald, Technical Association of the Pulp and Paper Industry.

Manhattan Again Wins Top Honors

Climaxing its annual convention, just concluded in New York City, the National Advertising Agency Network awarded its first prize for Best Business Paper Advertising Campaigns to the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan Inc., Passaic, N. J. for the third consecutive year. It also gave Manhattan second award in the employee relations section.

Conservation of mechanical rubber products was again the theme of the winning campaign, carrying on with the educational program that won the company first prize last year. In addition, the campaign featured Manhattan's leadership in synthetic rubber.

Carried in 55 industrial publications, the advertisements were supplemented with direct mail pieces, bulletins, calendars, instruction tags, wall cards for the proper care of rubber goods, dividend enclosures, and Anniversary material as the company is celebrating its 50th Anniversary this year.

The employee relations award exhibit included an organ to exchange information between employees in the armed services and those still working, Campaigns for War Bonds, Industrial Safety, Scrap and against Absenteeism.

The Microchemistry of Pulp Fibers

I. The Significance of Fiber Ballooning in the Pulping Process

By William M. Harlow[1]

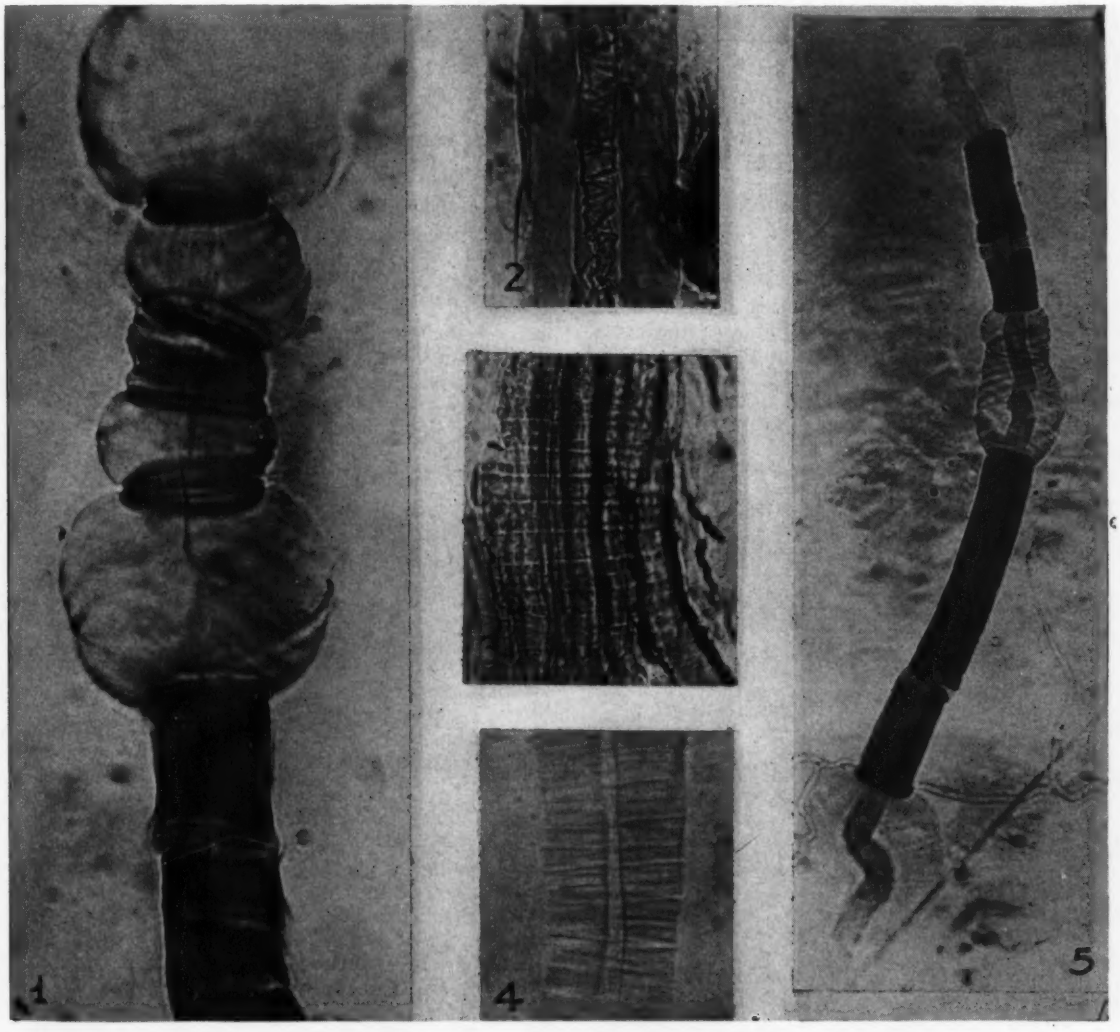
Abstract

Ruthenium red dissolved in trimethylbenzylammonium hydroxide provides an extremely selective staining-swelling reagent for studying changes in fibers produced by various pulping processes.

In a series of seven kraft pulps where the lignin content varied from 23.7% to 3.0%, it was possible to identify and arrange in the proper sequence all but the first two by their behaviar in the above swelling reagent.

In this and also two other series of pulps prepared

[1] Dept. of Wood Technology, New York State College of Forestry, Syracuse, N. Y.
[2] Use of the quaternary ammonium hydroxides was suggested to the writer by L. E. Wise of the Institute of Paper Chemistry, Appleton, Wis.
[3] Courtesy of Sydney Coppick.



FIGS. 1-5

(Magnifications are between 300 and 450×)

Visual Effects of Trimethylbenzyl Ammonium Hydroxide on White Pine Groundwood Cooked for Varying Lengths of Time by the Kraft Process. Fig. 1—General Ballooning Occurs at a Lignin Percentage of 6.5. Fig. 2—Appearance of Fibers between 20% and 27% Lignin Content. Fig. 3—Appearance of Fibers between 11% and 17% Lignin Content. Fig. 4—Appearance of Fibers between 3% and 4.5% Lignin Content. Fig. 5—Same as Fig. 1.

by different methods, fibers which ballooned most characteristically were from those samples which made the strongest paper.

Fiber ballooning, or the production of alternating bead-like swellings and ring-like constrictions in chemically-treated fibers has been studied and reported by a number of workers. All seem to agree that the outer layer of ballooning fibers resists, if only temporarily, the action of various swelling reagents, while meantime the inner layers swell prodigiously and emerge through gaps forced in the outer layer.

Ritter *(11)* and Lewis and his co-workers *(2, 10)* pointed out that ballooning is related to previous chemical treatment of the fibers. Fibers from "raw cooks" do not balloon, neither do greatly delignified ones. Best ballooning occurs in fibers having a relatively low but appreciable lignin content.

There does not seem to be complete agreement as to the layers of the fiber wall which are chiefly involved in ballooning. Ritter *(11)*, for instance, speaks of "outer sleeves" and "inner sleeves," respectively, while Bailey and Kerr *(1)* state that although "the primary wall may aid at times in bead formation, the controlling factor appears to be differences in orientation of cellulose in the outer and central layers of the secondary wall." Hock and Seifriz *(7)* speak of "outer windings" and "inner windings," but it is not clear which layers of the fiber are intended. Bixler *(3)* applied Kerr and Bailey's *(9)* cell wall terminology to sections subjected to the various commercial pulping cooks and concluded that "the cambial (primary) walls not only exist in mature wood cells as definite structural units, but also none of the commercial digesting liquors or bleaching agents remove them and that they are definitely a part of pulp fibers." Furthermore, by physical as well as chemical tests he showed that fiber ballooning is caused by the difference in nature of the primary and secondary walls, respectively. The former strongly resists mechanical or chemical enlargement, while the latter is more spongelike and can be stretched or swollen a considerable amount before rupture takes place.

There seems to be general agreement that the outer wall (presumably primary) exhibits under certain circumstances a spiral structure with the "fibrils" running more or less at right angles to the fiber axis. All of the above workers report evidence of such alignment, and Bixler states that the cambial (primary) walls may not be a continuous sheath of cellulose but may consist of laterally wrapped bands cemented together with some noncellulosic material so as to form the appearance of a continuous sheath. Fowler *(4)* has studied the primary wall of pulp fibers using pectin and lignin solvents, respectively, and also polarized light; his conclusions substantiate the picture already presented of the structures involved.

Recently it has been found that ruthenium red dissolved in trimethybenzylammonium hydroxide is an extremely selective reagent for studying fiber structure *(6)*[2].

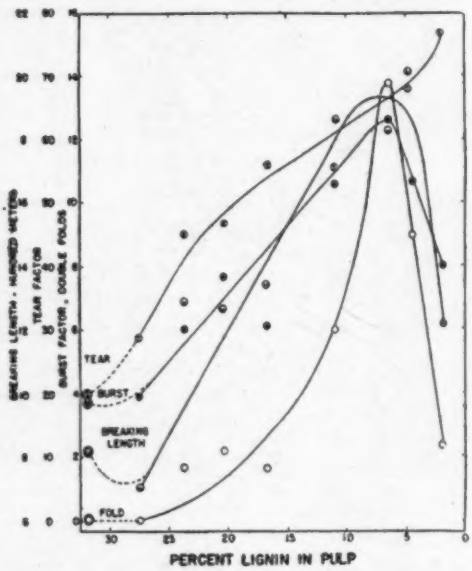


FIG. 6

Strength of Kraft, White Pine Pulpsheets. Uniform Fiber Distribution. [After Jahn and Holmberg *(8)*]

Experimental Part

Jahn and Holmberg *(8)* have made a careful study of the strength of paper and fiber boards from pulps of different lignin content. This work was paralleled by an examination of the microchemical aspects of the problem by Fowler and Harlow *(5)*. Because samples of these pulps were still available[3] the new staining-swelling reagent was applied to them. The base was used in an approximately 50% aqueous solution (2.1*N*). The visual effects of the reagent on Holmberg's kraft pulps are noted in Table I and Figs. 1 to 5.

TABLE I.—APPEARANCE OF KRAFT PULP FIBERS OF DIFFERENT LIGNIN CONTENT IN TRIMETHYLBENZYL AMMONIUM HYDROXIDE[1]

Holmberg Number(*8*)	% Lignin	Color of Fibers in Swelling Reagent	Visible Structural Changes
D (Original groundwood)	27.4	Brown	Little change; slight swelling.
D-2	23.7	Brown	Similar to "D."
D-7	20.4	Brown	Slightly greater swelling; otherwise similar to D-2. [D-7, Fig. 2.]
D-3	16.7	Brown	Fibers more swollen; a number of fibers show transverse markings (Fig. 3); sporadic ballooning.
D-8	11.1	Brown	Similar to D-3 but more fibers show cross markings; sporadic ballooning.
D-4	6.5	Pale brown	General and conspicuous ballooning (Figs. 1 and 5); a few fibers as in D-5.
D-5	4.5	Nearly colorless	Fewer ballooned fibers; many as in Fig. 4. These do not balloon but swell prodigiously showing an extremely attenuated structure; some become more or less dispersed.
D-1	3.0	Practically colorless	Very few ballooned fibers; mostly as in Fig. 4: appreciable dispersion takes place.

Holmberg's "K" series of soda aspen pulps showed no ballooning at the higher lignin percentages. At 6.6% lignin content only sporadic ballooning occurred, but at 1.8% lignin, general and conspicuous ballooning took place, and also considerable dispersion.

The chlorine dioxide series on white pine reacted similarly. Sporadic ballooning took place at 7.7% lignin, and was more pronounced at 1.7%. However, there was less ballooning and less evident dispersion in this series than in the other two sampled.

In the kraft series, with the exception of the first

[1] Similar behavior with cuprammonium hydroxide on a less extensive series of pulp was reported by Lewis and Richardson (*10*), but cuprammonium seems to be more drastic and less selective than the above base.

two "Ds," it was possible to arrange them as "unknowns" in an exact scale of ascending or descending lignin content by observing their behavior in the swelling reagent.

Discussion

Groundwood pulp is not a particularly desirable material for critical microscopic study, but in spite of many crushed and torn fibers, enough survive to enable one to observe and photograph at least portions of them. It may be said for the quaternary base employed that it is less drastic and more selective in its action than other swelling reagents commonly used. Combined with the stain it makes possible the recording of fine details of structure, such as those shown in Fig. 4, which ordinarily are extremely difficult to photograph. Attention is also called to the central cavity and inner wall of the fiber which often stand out in contrast to the ballooned portion surrounding them.

When Holmberg's strength curves and data for the different pulpsheets are studied [Fig. 6] and compared with the results from these swelling tests, some interesting, and perhaps significant facts emerge. In all three pulps, each prepared by a different process, the greatest average sheet strength occurred at or near the point (lignin percentage) where ballooning was most conspicuous and general throughout the samples tested. In the kraft series strength increased down to about 6% lignin; maximum ballooning occurred at this point. Pulps of the other two series produced stronger sheets down to the lowest lignin content, and it was in these last samples that ballooning was characteristic. It appears, therefore, that ballooning in the particular swelling reagent employed may not necessarily indicate the amount of lignin present, but much more important, may provide a simple and easily applied test for determining at what point fibers will produce the strongest paper.

Certainly this was the case in the three pulps studied, and hence ballooning merits further investigation to determine exactly the chemical and also physical factors involved.

Literature Cited

1. Bailey, I. W., and T. Kerr, *J. Arnold Arb.* 16:273-300, 1935.
2. Carpenter, C. H., and H. F. Lewis, *Paper Trade J.* 99: *TAPPI Sect.* 31-42, 1934.
3. Bixler, A. L. M., *Paper Trade J.* (Oct. 13, 1938), *Tech. Assoc. Papers* 21:181-192 (1938).
4. Fowler, W. F., Jr., Unpublished portion of Thesis, N. Y. S. College of Forestry (1940).
5. Fowler, W. F., Jr., and Harlow, W. M., *Paper Trade J.* (Apr. 2, 1942); *Tech. Assoc. Papers* 25:257 (1942).
6. Harlow, W. M., *Paper Trade J.* (April 15, 1943).
7. Hock, C. W., and Seifriz, W., *Paper Trade J.* 110: *TAPPI Sect.* p. 53 (1940).
8. Jahn, E. C., and C. V. Holmberg, *Paper Trade J.* (Apr. 23, 1942); *Tech. Assoc. Papers* 25:219-224 (1942).
9. Kerr, T., and Bailey, I. W., *J. Arnold Arb.* 15:327-349 (1934).
10. Lewis, H. F., and Richardson II, C. A., *Paper Trade J.* 109: *TAPPI Sect.* 188-190 (1939).
11. Ritter, G. J., *Paper Trade J.* 101: *TAPPI Sect.* p. 264-272 (1935).

Foster D. Snell Inc. Increases Staff

Increased activity in research in the Rubber and Plastic Department of Foster D. Snell, Inc. has required the addition of three new members to its staff. The new members are Irving Merdinger, B. S., New York University, formerly with U. S. Rubber Company; Madlyn M. Sheldrick, B. S., Brooklyn College and Asher Wollison, B. S., recent graduate of the College of the City of New York.

Agatina Carbonaro, M. A. Columbia University, formerly with the Arabol Manufacturing Company, is now a member of the analytical staff of Foster D. Snell, Inc.

Dennison Emergency Supply Chute

FRAMINGHAM, Mass., July 5, 1943—The Dennison Emergency Supply Parachute, made from Para-Crepe, and developed by the Dennison Manufacturing Company, has solved a problem which had long bothered Army, Navy, and Civil Air Patrol authorities and has also proved of immense value in civilian life.

An answer to the need for dropping air-borne supplies quickly and safely to people who are isolated and in danger is now available in the new Dennison Emergency Supply Chute. The 'chute has been designed to deliver a precious cargo gently and accurately to the spot where it counts, a job being so ably undertaken by the Civil Air Patrol.

The most rigid requirements have been met in recent field tests. The 'chute is satisfactory in speed, accuracy and strength. It opens in from 1 to 3 seconds after release and is designed for minimum drift, permitting accurate descent from low altitudes. It is designed to carry 25 pounds and tests made under favorable conditions prove that up to 50 pounds can safely be carried. This indicates that a package containing adequate supplies for several people can be dropped at one time. The tests also showed that the same 'chute can be used repeatedly to drop bundles of varying weights and sizes.

The Dennison Emergency Supply Chute is made from a special stock sufficiently strong to withstand the impact of opening when dropped at normal civilian plane speed. It is rugged and workmanlike in construction . . . especially designed for safe landing of emergency supplies such as food, water, medicines, clothing, fire fighting equipment and tools.

In such disasters as floods, forest fires and airplane crashes, prompt action with the use of this parachute can save lives. It is a compact and effective unit, designed for dependable performance under all conditions. It is manufactured by a company with a 100-year record of leadership in the paper converting field.

The parachute weighs 1 pound, 5 ounces and when open has a diameter of 5 feet. It takes up approximately one-half a cubic foot of space and is packed on a heavy cardboard base for strapping to package.

Instructions for attaching parachute to package and for releasing complete unit from plane are packed with each Emergency Supply Parachute.

Bag Makers Discuss Conservation

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 7, 1943—Conservation of paper in the manufacture of grocers' and variety bags to bring production in line with the amount of wood pulp which will be allocated for such bags, was discussed at a meeting of the Grocers and Variety Bag Manufacturers Industry Advisory Committee and War Production Board officials in Washington recently.

WPB announced on June 29 that it will begin allocating wood pulp during the third quarter for the manufacture of various products, including containers. The amount of pulp to be allocated for containers is expected to be announced during July.

Possibility of eliminating types of grocers' and variety bags, which are now considered to be non-essential to the war economy, and the need for directing types of bags to be produced to the proper end use, were discussed.

Sulphite Acid Testing*

The Palmrose Iodate and the Winkler Tests

By Donald R. McMasters[1]

Abstract

Since operating difficulties in the mill were traced to variations in the combined sulphur dioxide content of the cooking acid, a survey was made to determine why such conditions existed.

The survey showed that, using the Winkler test, discrepencies existed between the laboratory and mill determinations of combined SO_2. Identical samples were analyzed by the Winkler test and the Palmrose iodate test to determine the influence of performance errors on test results. An attempt was made to ascertain which test would correlate most closely with a gravimetric analysis and would give the same result regardless of the individual operator.

Performance errors in the Winkler test were due largely to a variation in both the quantity of phenolphthalein indicator solution used and the depth of color of the end point chosen. The iodate method eliminated almost all performance errors of mill operators. The iodate test checked closely with the quantitative determination of combined SO_2, except for the accumulator acid, where a constant differential was found to exist. The iodate test was found to be a sufficiently accurate control test to assure the production of uniform cooking acid throughout the mill.

Consumers as well as producers of sulphite pulp have been continuously striving for a more uniform product. Instead of accepting as satisfactory, pulps with a permanganate number range of 5 or more points, present-day stress upon quality limits this range to perhaps one point or less. The content of total and combined sulphur dioxide in the acid used to cook the pulp, together with methods of testing, has become increasingly important. Uniformity demands a highly sensitive test for combined SO_2.

With the Winkler method the acid test results fluctuated greatly. Different operators failed to secure the same results with identical samples. Consequently, considerable criticism was leveled at the plant testers, the laboratory testers, the solutions, and the test itself, depending upon the results obtained. The combined SO_2 in the accumulator apparently varied from 1.00 to 1.16% during the course of a day. However, a gravimetric check of the same samples showed the combined SO_2 to be uniform, varying not more than 0.02-0.03%. In addition, the amount of lime used varied without apparent reason, the combined SO_2 varied in the accumulator even when it was held constant in the acid plant, digesters "limed up" unexpectedly, and the pulp produced varied widely.

In an attempt to alleviate or eliminate these discrepancies, the long-used Winkler and the Palmrose iodate methods were subjected to numerous comparisons. Each test was assumed to have a correct scientific foundation and to rank high in test reliability and validity in the hands of experienced performers. The object of the investigation was to compare the results obtained from both tests and to determine errors of performance and of manipulation which might result, when these tests are entrusted to average mill operators. In other words, the problem was to ascertain which test, in the hands of average mill operators, would check most closely with the gravimetric analysis for combined sulphur dioxide.

Procedure

About 200 samples of acid were collected from the system tower, the storage tanks, and the accumulator. The only intial precaution taken was to place each sample in a cold water bath to hold it constant and to test it as soon as possible. Normal solutions were used with 1 ml. acid samples, and the commonly accepted procedure for each test was followed *(1, 5)*. Since the initial comparisons varied considerably, a gravimetric determination *(3)* was used to check the combined SO_2 obtained by the Palmrose iodate test and the Winkler test. This gravimetric analysis consumes considerable time, due largely to four separate filtering operations and the weighing necessary. Consequently a simpler method was devised, called a gravimetric titration method *(2, 3, 6)*, eliminating as many steps as possible. This method is called the gravimetric titration test, to distinguish it from the

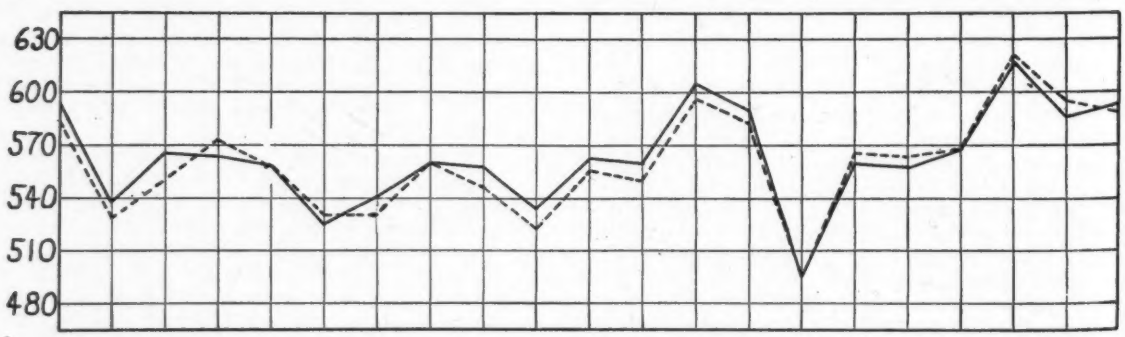


FIG. 1

Two Samples Each Day 6-24 to 7-9-42

Iodate and Winkler Tests of Accumulator Acid Total SO_2

Solid Line—Iodate Test
Broken Line—Winkler Test

* Presented at the meeting of the Lakes States Section of the Technical Association of the Pulp and Paper Industry at Appleton, Wis., March 9, 1943.

[1] Hoberg Paper Mills, and Instructor at East High School, Green Bay, Wis.

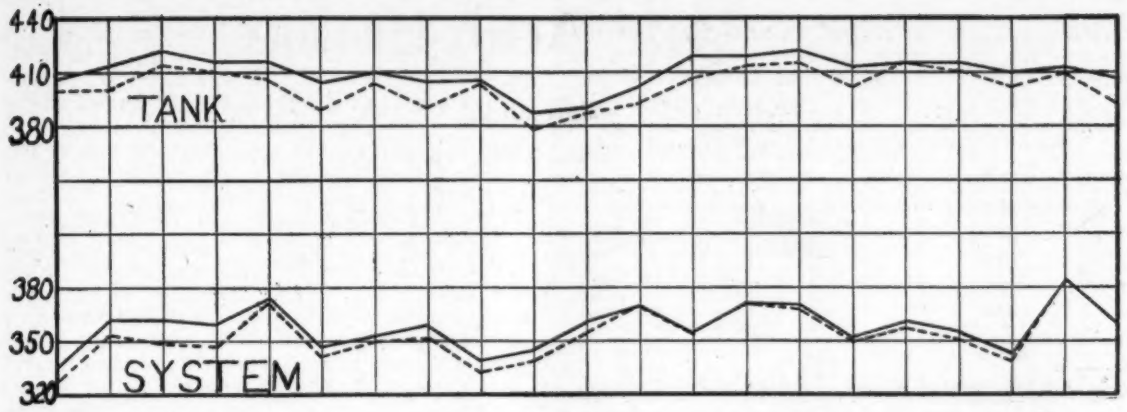


FIG. 2

Two Samples Each Day 6-24 to 7-9-42

Iodate and Winkler Tests of Tank and System Acid Total SO_2

Solid Line—Iodate Test
Broken Line—Winkler Test

true weight analysis, because the amount of combined SO_2 was ultimately determined by a titration of calcium oxalate with potassium permanganate solution.

One hundred thirty-two different samples of plant acids, covering more than three weeks of plant operation, were tested by all methods, Winkler, iodate, gravimetric titration, and true gravimetric. This preliminary study showed that the two gravimetric tests gave identical results (hence the lengthy weight determination was eliminated) and that extreme care was necessary in performing the Winkler test. The laboratory results were compared with the plant reports for the same period. Then the iodate test was put into the plant along with the Winkler test. Gravimetric checks were run on operators' samples to learn which test results most closely correlated with the more accurate gravimetric analysis.

Observations

Figures 1, 2, and 3 show that the Winkler and the iodate tests, in general, follow the same trends. However, there are too many instances where the relationship falls out of line, as is shown by the crossing of the two lines at irregular intervals. This situation is most apparent in Fig. 3 which is concerned with the percentage of combined SO_2. The combined SO_2 is obtained by subtracting the free SO_2 from the total SO_2.

Example: Total minus Free equals combined SO_2
$5.92\% - 4.89\% = 1.03\%$

Any deviation in the measurement of either the total or the free SO_2 is bound to be reflected, and often magnified, in the combined SO_2 obtained. Theoretically, the same operator should be able to retest the same sample over and over again and secure identical results each time. Actually, a retest that comes within 0.1 ml. (about two drops) of the solution used, is as close a check as can be expected. Should only the measurement of the free SO_2 in the above equation vary by 0.1 ml. of solution, the free reading then becomes 4.86% or 4.92% instead of 4.89%, and the combined SO_2 is correspondingly, changed to 1.00% or 1.06% instead of 1.03%. Be cause the accumulator acid usually uses from 13-19 ml. of test solution, an error of 0.1 ml. is really only 1 part in 130 to 190, or 0.77 to 0.52% error. Stated positively, the tester is better than 99% efficient.

Table I lists the possible errors produced by small miscalculations of the amount of solution used.

Because two separate samples are used in the

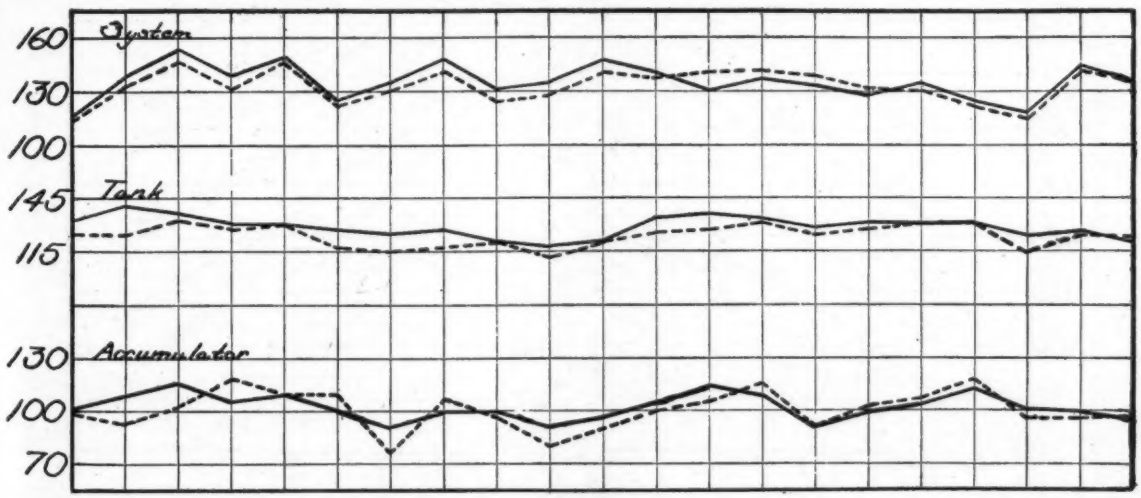


FIG. 3

Two Samples Each Day 6-24 to 7-9-42

Iodate and Winkler Tests of Accumulator, Tank, and System Acids Combined SO_2

Solid Line—Iodate Test
Broken Line—Winkler Test

Winkler test, for the free and the total SO_2 determinations, the above errors are more likely to occur in this test than in the iodate test. However, since the one sample used in the iodate test undergoes both titrations, even as large an error in sample size as a drop or more, over or under, gives identically the same value for the combined. In other words, the performance mistakes that may possibly creep into an acid analysis can be of three general kinds, miscalculations of: (1) sample size, (2) amount and normality of solution used, or (3) detection of the proper end points. Miscalculations of sample size, in the iodate test, will either increase or decrease the total and free SO_2 by the same amount and thus the errors compensate each other and give the correct combined SO_2. To produce pulp of uniform quality, it is imperative that the combined SO_2 be determined accurately and held fairly constant.

TABLE I.—VARIATIONS IN PERCENTAGE OF SO_2 OBTAINED BECAUSE OF MISCALCULATIONS CAUSING AN ERROR NOT GREATER THAN 0.1 ML. OF 0.1 *N* SOLUTION

Titration Error *			Resultant Variations SO_2		
Total, ml.	Free, ml.	Total Error, ml.	Total, %	Free, %	Combined, %
+0.1	+0.1	0.2	+0.03	+0.03	0.00
+0.1	correct	0.1	+0.03	0.00	0.03 over
+0.1	—0.1	0.2	+0.03	—0.03	0.06 over
correct	+0.1	0.1	0.00	+0.03	0.03 under
correct	—0.1	0.1	0.00	—0.03	0.03 over
—0.1	+0.1	0.2	—0.03	+0.03	0.06 under
—0.1	correct	0.1	—0.03	0.00	0.03 under
—0.1	—0.1	0.2	—0.03	—0.03	0.00
Perfect Analysis					
correct	correct	0	0.00	0.00	0.00

* If the true amount of titrating solution needed is 18.3 ml. and an observed reading of 18.2 ml. is obtained, the titration error produced is —0.1 ml. A reading of 18.4 produces a tritration error of +0.1 ml.

Because the free SO_2 is gaseous sulphur dioxide dissolved in the water present, it is easily lost through agitation, temperature, and pressure changes. Apparently minor manipulations such as stirring too rapidly, placing the sample in a warm dish, allowing the sample to stand in a warm atmosphere, or even reducing the pressure by drawing too rapidly on the pipet, can cause a measurable quantity of gas to be lost. Should the sample for the total analysis be correctly determined and a second sample for the free determination be disturbed for any of the above reasons, the combined SO_2 will suffer accordingly. The one sample used in the iodate test minimized this possibility. Should a sample stand for a day or so, some free SO_2 will be lost. The total SO_2 will be proportionately decreased, so that when the remaining free SO_2 is subtracted from the remaining total SO_2, the previously determined combined SO_2 is again obtained. Therefore, samples which the "cooks" analyze can be saved and checked in the laboratory the next day, or compared with a gravimetric analysis performed later, or checked in a variety of other ways. The Winkler test does not so easily lend itself to such a recheck, because the two samples used in the titration may not always lose the same amount of free SO_2. Consequently, wide fluctuations in the amount of combined SO_2 occur.

Another disadvantage of the Winkler method lies in the larger surface area of the dish sample that is exposed to gas concentrations in the atmosphere. The same size iodate sample in a small Erlenmeyer flask is not as readily affected. One test made in the digester room when the asmosphere was heavily laden with SO_2 tested 5.82% total. The blue-colored end point disappeared in about two minutes and the additional amount of iodine necessary to bring back the proper colored end point, increased the total to 5.89% or as seven points of combined SO_2.

It is readily apparent why Fig. 3 shows the two tests to be most inconsistent in measuring the combined SO_2 even though all tests were made by the same individual under ideal laboratory conditions. As these tests continued, a considerable effort was made to eliminate disturbances due to manipulation, by control of temperature and pressure, the use of a minimum of agitation, and standardization of the Winkler end points. Figures 5 and 6 show the efficiency of such a procedure, although the increase in efficiency of the tester with time undoubtedly accounts, in part, for the more uniform results obtained.

Both the iodate and Winkler methods, with 1 ml.

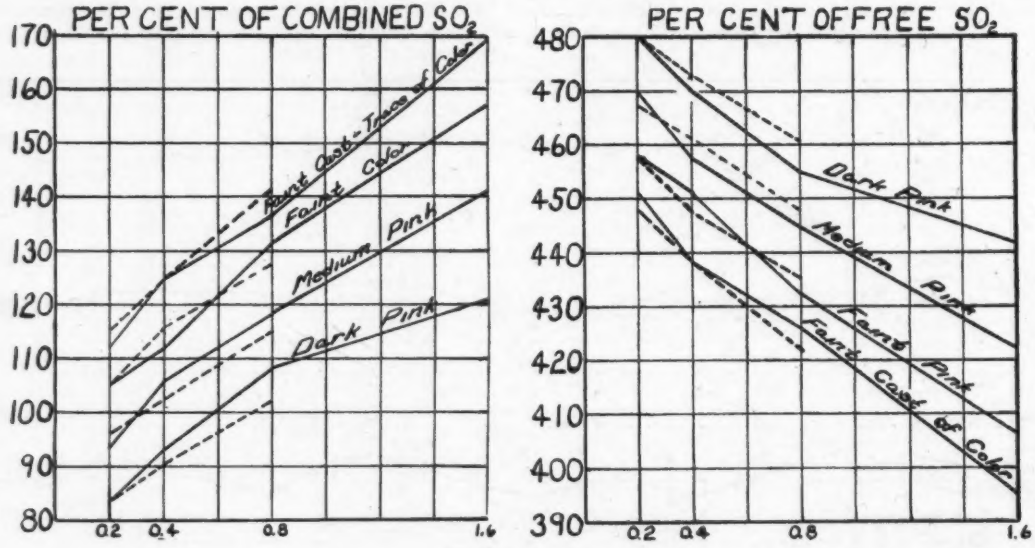


FIG. 4

Solid Line—Trial I
Broken Line—Trial II

Effect of Varying Both the End Point and Amount of Phenolphthalein in the Winkler Test of Acid from the Accumulator
Winkler Total SO_2-563

Iodate Test of Same sample

Total	Free	Combined
566	454	112

samples and 0.1 *N* solutions used, measure only in multiples of 0.03% (occasionally 0.04%). This amount seems accurate enough until it is considered that a figure of 122 combined SO_2 in the system is really 1.22%. A mistake then of 0.1 ml. either way in the amount of test solution used, yields a result of 119 or 125. Consider that 0.1 ml. is only about two drops of test solution, and the delicacy of these tests is more fully appreciated. Small errors in the calculation of solution strength, or in the measurement of the amount used, or in the calibration of burets, may produce an error of at least 0.03%. It seems logical to conclude, therefore, that under existing conditions, for a known combined of 122, a volumetric computation of 122 ± 0.03 (119-125), or a maximum variation of 0.06, should be accepted as a close check.

The gravimetric titration procedure is immune to this, as well as other performance errors, due primarily to the 20-ml. size sample used. An error of 0.1 ml. in the amount of solution used in this analysis causes a change of only 0.01% in the final figure.

Many investigators have previously noted the weak phenolphthalein end point and criticized this indicator for its effect upon sulphite acid testing. The starch end point used in the determination of total SO_2 for plant acids is definite in both the Winkler and iodate tests. The same can not be said for the Winkler phenolphthalein end point. The color obtained at the neutral point was observed to change from varying degrees of faint pink in the laboratory to deeper shades of pink, rose, and even red, throughout the mill. In an attempt to standardize this end point in all the tests recorded here, a dish with the proper faint pink color was kept before the observer at all times. Figure 4 shows that most any figure can be obtained by varying either the amount of indicator used or the color of the end point. Suppose an operator desires to secure a value of 4.45% free SO_2. Table II shows how this figure can be obtained.

The colors chosen here were approximately those found to be in use, except that none used the faint trace of color as an end point.

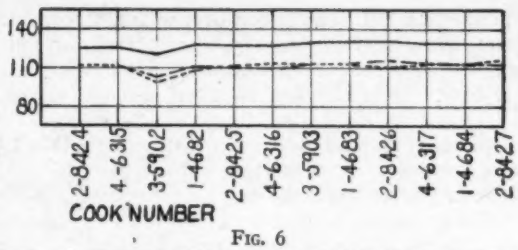


FIG. 6

Gravimetric Compared with Laboratory and Mill Iodate Analysis of Combined SO_2 in Accumulator Acids.
Gravimetric Titration ————; Laboratory Iodate ·····; Plant Winkler Report – – – –

Phenolphthalein is known to be influenced by those concentrations of carbon dioxide present in cooking acids as well as SO_2. The methyl red used in the iodate method is not so readily affected (*6*).

Perhaps of greater importance to mill operators is the gradual change that takes place in the phenolphthalein indicator as the end point is reached. The acid used in sulphite pulp manufacture does not have a sufficient concentration of hydrogen ions to accomplish as abrupt a change as desired. The tendency on the part of mill testers is to change the color

TABLE II.—VARIATION OF AMOUNT OF INDICATOR AND END POINT

Approximate amount of indicator used, ml.	End Point	Free SO_2, %
	Effect on Free SO_2	
0.3	Trace of color	4.45
0.5	Faint pink	4.45
0.8	Medium pink	4.45
1.0	Dark pink	4.45
	Effect on Combined SO_2	
Indicator used, ml.	End Point	Combined SO_2, %
0.2	Trace of color	0.83
0.2	Dark pink	1.15
1.6	Trace of color	1.21
1.6	Dark pink	1.69
0.2	Faint pink	1.05
0.8	Faint pink	1.31
1.6	Faint pink	1.57

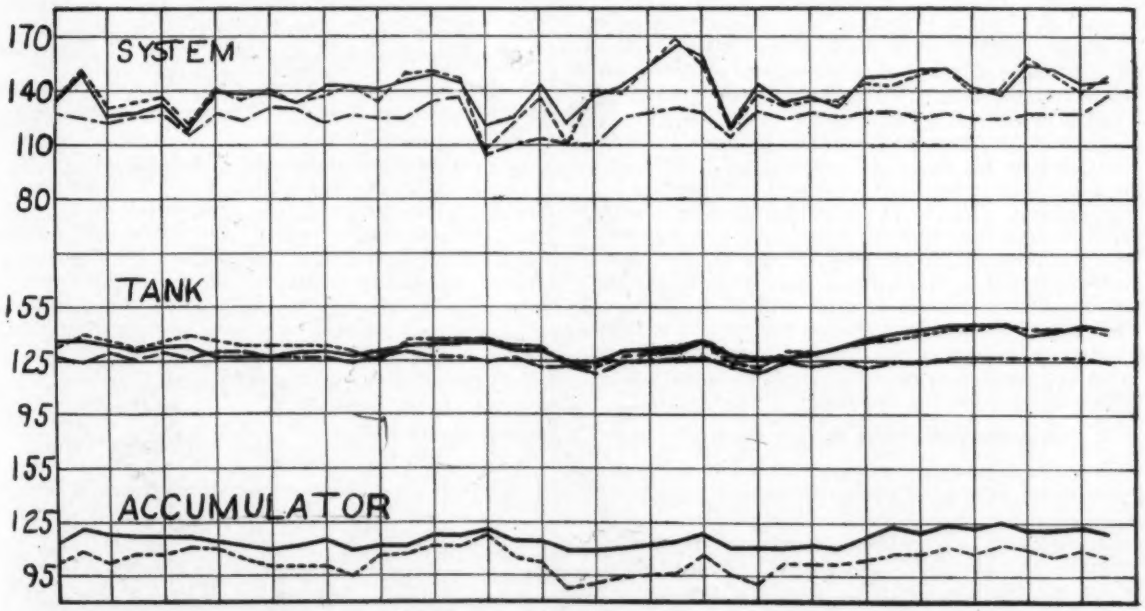


FIG. 5

Gravimetric, Iodate, and Plant Winkler Tests of Combined SO_2 in the System, Tank and Accumulator Acids
Gravimetric Titration ————; Iodate ————; Plant Winkler Report – – – –

of their end point so as to conform with a reasonable figure. However, they cannot be criticized for failing to secure the same phenolphthalein end point time after time. It is a known fact that the human eye, if subjected to a certain colored light for a short time, tires, to such an extent, that it positively refuses to see that color for a short period thereafter. This retinal fatigue undoubtedly plays a prominent part in visualizing the phenolphthalein end point. As the basic solution is dropped into the acid sample, a deep rose or red appears. This color fades out as the surrounding acid neutralizes it. Eventually, one drop causes a faint pink color to appear, but by this time the observer's eyes might as well be closed. His eyes are so fatigued by the red, that they fail to see the pink until it is so pronounced that the solution is now definitely alkaline. The failure of the broken lines on Fig. 4 to coincide with the line for the first trial, and since neither is a smooth curve, indicates a failure on the part of the observer to standardize his end points in spite of a concentrated effort to do so.

Since the amount of indicator used was found to so gravely affect test results, the methyl red indicator used in the iodate test was made of a definite concentration in distilled water. The test sample was then placed in a portion of this solution without further dilution.

Figure 5 shows the relationship between the laboratory (iodate and gravimetric) tests and the acid plant Winkler test results. The plant report hovers about 1.25% combined SO_2 in the tank while both laboratory tests run closer to 1.40%. Neither does the acid plant report show any of the abrupt rises and falls noted on the other tests. For a 10-day period the acid plant reported a combined SO_2 ranging from a low of 1.02% to a high of 1.44%; with an average of 1.27%. For the same period a much smaller number of tests in the laboratory indicated a low of 1.06% and a high of 1.70% SO_2. About two thirds of all these tests made in the acid plant ranged between 1.21% and 1.34% SO_2.[2] In other words, only 0.13%, or four-tenths of 1 ml., or about eight drops of test solution, covers the difference between two thirds of their tests. During a later week the range was still narrower, 1.18% to 1.38%, and two thirds of the tests made ranged from 1.23% to 1.31%, or about five or six drops of test solution. None of the laboratory tests showed the acid produced to be this uniform. The weak phenolphthalein end point, together with the other errors of the Winkler test, seems to prevent the securing of accurate measurements. Figure 6 shows the accumulator acid after the introduction of the iodate test into the acid plant. The control of combined SO_2 in the system is now much more uniform and constant than formerly. This control in the system naturally produces a more uniform combined for the cooking process.

Advantages of the Iodate Method

One discrepancy is apparent in Fig. 6. The gravimetric analysis of the accumulator acid usually averaged about fifteen points above either of the volumetric tests. No work was done to explain the cause of this deviation. Mill experience with the iodate test showed that the old methods of checking the standard solution used were not accurate enough to eliminate apparent changes in combined, when different bottles of solutions were used for testing the same sample. The technique employed in standardizing the normality of the solutions used was at fault. In other words, the iodate test itself, was more accurate than the method employed to standardize the solutions for the Winkler test.

[2] In the computation of these standard deviations, fractions were dropped. For these distributions, the final result is not changed appreciably by so doing.

TABLE III.—LABORATORY AND PLANT ANALYSES OF IDENTICAL SAMPLES—COMBINED SO_2 ONLY

	Acid Maker Iodate				Lab. Operator Iodate	Grav. Analysis
	No. 1	No. 2	No. 3	No. 4		
System	141				141	142
Tank	138				135	135
System	135				138	139
Tank	135				134	134
System		151			148	148
Tank		144			144	141
System		140			141	139
Tank		148			147	144
System			144		140	142
Tank			147		144	147
Tank			131		128	129
System				134	134	133
Tank				128	128	129
System				131	131	133
Tank				128	128	126

The iodate test enables the production of a more uniform cooking acid than does the Winkler as is shown by comparing Fig. 6 with Fig. 3. The quality of pulp produced was improved. Less lime and sulphur are now used, and the "mill testers" have greater confidence in the test results they obtained. Table III shows how closely the laboratory iodate and gravimetric results correlated with the acid makers' results. The men experienced no difficulty in changing to the iodate method. In fact, those to whom this test was introduced actually welcomed a repetition of their analysis. This attitude is in sharp contrast to the defensive attitude observed under the Winkler test. Particularly under present circumstances does this boost in plant morale seem to be a definite and worth-while contribution.

Conclusions

1. The iodate and Winkler tests agree under ideal conditions, but in practice are thrown apart, especially in the measurement of combined SO_2.

2. The two samples used in the Winkler test are more likely to cause errors than the one sample used in the iodate test.

3. More handling is necessary in the Winkler test. There is a greater likelihood of SO_2 being lost through agitation, temperature, and pressure changes since the combined is obtained by subtracting the free from the total, the lost sulphur dioxide may seriously affect the amount of combined.

4. Accurate retesting of samples, either immediately or after a time interval, is more easily accomplished through the iodate test.

5. The larger surface area of the Winkler sample is more readily affected by concentrations of gas in the atmosphere.

6. Both tests were devised so as to measure only in multiples of 0.03%. Accurate performance is necessary to hold discrepancies to 0.03% or lower.

7. The gravimetric titration procedure is immune to most performance errors and can be used as a laboratory check on volumetric results.

8. The amount of phenolphthalein indicator used, and the varying end points usually chosen, seriously impair accurate testing by the Winkler method.

9. A more uniform acid is produced when the iodate test is relied upon, and less lime and sulphur are used.

10. The iodate test is quite sensitive. Hence the normality of the solution must be very accurately standardized.

11. The average mill performer experienced no difficulty in mastering the iodate test and soon developed real confidence in his test results.

Literature Cited

1. Birchard, W. H., "A Comparison of Methods Used for Testing Sulphite Cooking Acid." *Paper Ind.* 8: 793-6, 1926.
2. Griffin, R. C., "Technical Methods of Analysis." New York, McGraw-Hill (1927).
3. Institute of Paper Chemistry, "Standard Methods of Analysis." Method No. 110 (March, 1941).
4. Jackson, D. T., and Parsons, J. L., "A Simplified Method for the Analysis of Bisulphite Cooking Liquor." *Paper Trade J.* 104: No. 8, 122-124 (Feb. 25, 1937).
5. Palmrose, G. V., "A Mill Test for the Exact Determination of Combined Sulphur Dioxide." *Paper Trade J.* 100, No. 3: 38-39 (Jan. 17, 1935).
6. Treadwell, F. P., and Hall, W. T., "Analytical Chemistry," Vol. II. New York, John Wiley (1930).

Current Operating Problems and Developments*

By Fred S. Crysler[1]

I will confine the remarks to those things which have contributed to progress, or at least to understanding. No effort which results in failure is entirely wasted. Usually enough understanding is created from preliminary failures to produce a more lasting success in the end. An example of this point would be our experience with stainless steel cylinder faces. We tried welding them without success, and we tried running them in liner vats to poor advantage. We finally settled down to sewing them with heavy stainless wire and running them in filler vats only. They are just where they belong now, as far as our plant is concerned. Their value lies in their extremely long trouble-free life. They seem indestructible. Our oldest has been in service over 2½ years without noticeable wear. They stay completely clean and open in filler positions, but were of little value in liner vats, because our liner cylinders lime up on spokes, rods, and winding wire and have to be removed in four to six months for cleaning, anyhow.

Another item with which we are very well pleased is our brass bladed whippers. The oldest one is over two years in service, and the bats have worn only 1/64 inch by careful measurement. These, together with brass spread rolls, brass lip suction boxes, fiber slices, new rubber plain and wormed felt rolls, rubber covers on all primaries, and antifriction bearings throughout, have contributed heavily toward our present good felt life which has increased about 1/3 during the past three or four years. Our fiber slices have been in service about five years, and the oldest is still as good as new. Fiber doctors on our Stonite rolls have been successful up until recently, but the last new blades received were too soft and crumbled at the tip, they would not wear to a sharp edge.

We have had a large measure of success with a blast or shower of hot air on the back of the sheet between the calendar stacks. We run some heavy solutions on high-moisture content bending boards, and the result is a sheet which is very hard to handle at the dry stack. This air blast has stopped wrinkling and picking troubles on the dry stack.

We have gone ahead with some limited equipment and building improvements possible in wartime, and one interesting development worth mentioning here is the new pulp storage and handling system. The machines and beater room are on the second floor, and we have inadequate service equipment from storage rooms to production. The one elevator is on the west side of the beater room for paper stock handling. The pulp is stored on the east side. To provide adequate handling facilities, we gutted the old straw cooking house which lies adjacent to the beater room on the east side, poured a new floor at freight car level, which is also connected to the old pulp storage rooms, and constructed a mezzanine into this room from our beater room. Forty inches below this mezzanine we constructed a loading stage, 20 feet wide and projecting out 6 feet into the room from the balcony. The electric tiering truck can load this stage with six piles of pulp bales, each four high and then push these back toward the mezzanine and spot six more piles. These twelve piles or 48 bales are easily available to beater furnish men through the use of an electric hoist, equipped with bale tongs and electrically driven between the loading stage and the mezzanine.

Another improvement of importance to us has been the revision of our coating machine to take large rolls. We installed double stands on each coater with one traveling electric hoist to load rolls on each. We use the outside bearing stands until the rolls have run down to a small diameter at which time two men slide the roll forward to the inside stands while operating. Then they load the fresh roll in the outside stand and prepare it for operation while the old roll is running out. The coater is down for the actual change over to the fresh roll for an average of about one minute. With power equipment to load the rolls, we have been able to increase the diameter of coating stock up to 61 inches maximum, and seldom run anything under 55 inches diameter. This has cut roll changing on the coaters in half, has increased our storage capacity from 50 to 100% and cut our roll handling labor in half. Many of these rolls weigh 2½ tons and are handled from storage platform to coater by one man with the brief assistance of one other at the time they are guided into position.

A minor, but interesting improvement has been in connection with handling Langston rewinder shafts at the paper machine winders. The 5-inch shafts are heavy and awkward to handle, so we installed a hand winch on the wall opposite each winder and pull the shafts up to this, through a wire cable and grab hook.

* Presented at the convention of the American Pulp and Paper Mill Superintendents Association, Hotel Commodore, New York, N. Y., June 15-17, 1943, as part of a panel discussion.

[1] Gen. Supt., Container Corp. of America, Wabash, Ind.

The shaft, as it emerges from the roll is caught in a saddle, suspended from a 500-pound chain hoist, running free on a track at right angles to the machine direction. After the roll is removed with the electric hoist, this shaft is pushed back into place still suspended in the saddle and dropped into its bearings.

We have had some good experience with a metal spray to build up a badly worn beater journal. This was particularly satisfactory in view of the fact that a worn beater journal built up several years ago by welding has recently gone bad due to cracking in the weld. We have also had a large degree of success in improving beater performance by laying a welded bead on the worn edges of alternate beater bars. This improved the output of our small breaker by 15 to 20%.

On the trouble side of the ledger, we are getting our share and have recently been faced with several unsolved problems, mainly the welded seams in the liner vats are spreading open, and we have run into serious corrosion at the calendar stacks. The water-box rolls are the only ones affected by this occurrence. These may or may not be related problems. We have had serious blistering of newly covered primary rolls, one of which had to be completely recovered. While the rubber company did not commit themselves as to cause, undoubtedly the rubber shortage and new formulations have probably created this situation. We recently had a broken journal in a new primary in the first helper position ahead of the main press. By some good fortune, the drive coupling prevented the journal from working out of the roll head, and we shut down without damaging felts or rolls. We lifted the roll out, balanced in a band with the back journal slightly cocked, and thus stuck in the head. When we got it out on the floor, we found that it was broken off less than 1½ inches inside the roll head.

About a year ago, we had a puzzling experience occur on occasional weekend shutdowns. We found the felts and rolls plastered with dozens of small bits of gummy, plastic material, like chewing gum wads. These were stuck on the roll surfaces and on the inside surfaces of the felts. We soon discovered our trouble, however. We were saturating the felts with a solution of sodium pentachlorphenate to mildewproof them, and we were using old wood acid barrels to contain the mixture. Enough acid was leaching out of the wood side walls of the barrels to start precipitation of the chemical as the insoluble resin, but in flocculent form. This precipitate coalesced on the felts and rolls into gummy spots which were very difficult to remove.

We have built up what, to us, is a very satisfactory system of log book records on our operating equipment. These contain individual pages for each item of cylinders, couches, primaries, presses, calendar rolls, jordan plugs, refiners, beaters, etc. The full history is kept of such items as manufacturing date, cover, thickness, density, crown, and grinding dates for rolls, operating data for jordans, recovering data for cylinders, and operating difficulties encountered in all cases. Felt tonnage history is accumulated in bar graph form and readily reveals the trend of performance. Detailed items of individual felt history are recorded in the felt log book.

We did some experimenting with sulphuric acid this year to replace a part of the alum used in beater sizing, and found out some interesting things, although we are not planning to do anything with it commercially until suitable mixing, storage, distribution, and measuring equipment is available. We have a hard water condition, and much paper stock is on the alkaline side. All of this alkalinity can be neutralized with acid, leaving for the alum the job of setting the size. We now use a minimum of 100 pounds of alum per 2000 pounds of stock, regardless of the amount of size needed. And in case alkaline furnishes are used, more alum is required. We have proved that we can replace all but 50 pounds of the alum with from five to ten pounds of sulphuric acid. Just to see how far we could go with this, we sized two beaters with nothing but rosin size and sulphuric acid. We were using machine white water in the beater and sufficient alumina was carried in the water to set the size in these beaters and give good results on the machine. The chemist tried this again on a start-up day, when no white water was available, and the results were, as you would expect, no sizing at all, until some alum which was dumped in the chest began to take effect.

Manpower Problems

Personnel management has received a large increase in attention in our plant during the past year. We have set up a personnel office, installed a personnel manager, and a stenographer, and even then found it necessary to farm out to other people a large number of strictly personal responsibilities, due to the enormous amount of emphasis needed in the plant these days on personnel problems. Briefly noted, this work covers:

1. Employment interviews and induction into our organization, plus introductions to the job foreman and the job, and finally, a follow-up of job fitness and earned advancements.
2. Convincing our old and new people of the value and necessity for war bonds, health and accident insurance, and our long-range pension plan.
3. Safety promotion and accident control, including the handling of all compensation cases, which are fortunately at a minimum. We now hold our company's paper mill safety award for the best low accident record in the company for 1942.
4. Operation of commissary.
5. Welfare and group kindness to individuals in trouble.
6. Handling of suggestions and suggestion awards.
7. Conducting of charity and war service solicitation campaigns.
8. Company rule interpretation and grievances.
9. Gasoline rationing.
10. Credit Union supervision and operation.
11. Fire prevention crew training and functioning. These crews have actually put out fires of a minor nature several times recently.
12. Wabash Concora biweekly newspaper management.
13. Absentee control. We feel that we have a fairly good record in this regard, since our unexcused absences run consistnetly around 1 and 1½%.
14. Perpetual up-to-date contact with our people in armed services, through address files, letters published in the newspaper and answered, monthly gifts, etc.
15. The newest personnel service, and one which we recently realized had long needed emphasis, is one which reveals to the ntire organization our own plant's part in the war effort. A large lighted display cabinet is used. This is filled with war production items which are packaged in our board. This display is changed weekly to allow current orders to be displayed. This cabinet really gets attention, and has stimulated many of our people to realize that they are a connecting link in the chain of war effort from mine, field, and factory to the troops in actual combat.

In closing, I might predict that all other problems will pale to insignificance in face of the manpower shortage immediately before us. The plants which survive this crisis will, by and large, be found to be the ones which had adequate recruiting training and personnel programs established and functioning.

"NON-USERS ARE THE LOSERS"

TENAX FELTS

PROFIT PRODUCERS

ON THE PRODUCTION FRONT

TENAX FELTS carry on valiantly! They have had over half a century of intensive training for today's crucial test of service. They produce great quotas of paper and fibre promptly and economically. And continue this record-making pace over long periods. Better turn NOW to Tenax!

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LOCKPORT FELT COMPANY
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For all uses requiring an extremely tough non-returnable paper mill core.

DURO—Standard returnable core of plus-standard quality. Shown with Taylor ends. Also available with Bermico ends.

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BERMICO®—A returnable fibre core—extremely hard, strong and rugged. Treated to resist weather and moisture changes.

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SHIPPING POINTS: LOWELL, MASS. HARTSVILLE, S. C.
DEPENDABLE SOURCE OF SUPPLY
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New U. S. Customs Regulations

Foreign traders this week were able to analyze closely and completely the new United States Customs Regulations of 1943, which went into effect July 1, when the annual "Custom House Guide" came off the press with the complete text of the new regulations, in process of revision for the past two years.

The new regulations, as published in the 1,500-page (7 Volumes in 1) thumb-indexed 1943 volume of the "Guide," represent the first complete revision since 1937, according to John F. Budd, publisher of the "Guide" and its two monthly companions, "American Import and Export Bulletin" and "Air Transportation."

In addition to setting the new regulations in larger type for easier reading, the new "Guide" also includes for the first time in the 81 years of its publication, an "Appendix" containing the texts of, or reference to sections of laws and the text of regulations administered by other Government departments, or agencies and enforced wholly or in part by the Customs Service.

In this section for example, will be found the former "Title-15 Comerce," having to do with foreign statistics, and "Title-46 Shipping," covering documentation, entrance and clearing of vessels, etc. (both regulations formerly appeared in the green section of the "Guide"). Regulations on the Exportations of Leaf Tobacco, Helium Gas, etc.; Importations of Food, Distilled Spirits, Meat Food Products, Teas, Drugs, Cosmetics, Carrots, etc.; Immigration Regulations, Importations and Exportations of Domestic Animals, Animal Products and Feeding Material, etc.

As in prior years, the "Guide" includes an alphabetical index of over 30,000 commodities and their rates of duty,—including the latest rates in accordance with the 25 Reciprocal Trade Agreements enacted to date . . . a revised Internal Revenue Section . . . descriptions of all U. S. ports of entry with individual directories of companies engaged in the shipping trades in each of them . . . and its well-known general information section on weights and measures, monetary values, trade terms, etc.

The annual "Custom House Guide" is supplemented monthly by the "American Import and Export Bulletin," and the new monthly, "Air Transportation," America's first publication devoted exclusively to Cargo-by-Air. These two publications in addition to keeping the Annual revised to date, assure subscribers a complete "Import-Export Information Service" covering the latest Laws, Regulations, Decisions, Rulings, Export and Import Control Requirements, Reciprocal Trade Agreements, etc., affecting Foreign Trade and Air Commerce.

The "Custom House Guide" is published by Custom House Guide, Custom House, New York—$20.00 plus postage.

Saalfeld Paper Co. Acquires Building

CINCINNATI, Ohio, July 6, 1943—The five-story stone building at the southeast corner of Second and Vine Streets, fronting 28 feet on Second and extending back 90 feet, has been acquired by the Saalfeld Paper Company from the M. M. White Estate.

The company is expanding its present quarters through acquisition of the corner property which adjoins the company's present quarters on Second Street.

Mills Ask Higher Newsprint Price

WASHINGTON, D. C., July 7, 1943 — Newspaper publishers have been called to a conference in New York City tomorrow to be informed by the Office of Price Administration of "certain representations made by Canadian producers for a higher newsprint ceiling."

When OPA last March granted an increase of $4 per ton on the ceiling price of newsprint, Canadian producers, who had asked for $8 more per ton, expressed their dissatisfaction. Prentiss Brown, price administrator, said at the time that the door would be left open for further consideration of the question. Since then four American newsprint manufacturers have also protested against the new ceilings and asked that they be raised by another $5 or $6 per ton.

A statement by OPA read:

"Representatives of the OPA national office will meet in New York tomorrow with a selected group of representatives of newspaper publishers. It will be a closed meeting. The meeting place was not disclosed.

"OPA representatives will discuss with the publishers the newsprint price situation as it may affect the supply of this commodity for the fourth quarter of 1943. Certain representations have been made involving higher newsprint price ceilings by the Canadian producing mills, acting through the Canadian Wartime Prices and Trade Board.

"These representations were transmitted to OPA when representatives of the agency went to Montreal for a meeting with Canadian Newsprint Administrator Guy Hoult and other members of the Wartime Prices and Trade Board on June 23. These representations will be made known to the publishers at tomorrow's meeting, but OPA does not want to make them public today."

W. S. Richardson Made Chairman

William S. Richardson, general manager of the industrial products sales division, the B. F. Goodrich Company, has been elected chairman of the OPA Mechanical Rubber Goods Industry Advisory Committee, it is announced from the office of Prentiss M. Brown, administrator of OPA.

The committee, which the B. F. Goodrich official will head, is composed of representatives of all rubber companies engaged in the manufacture of mechanical rubber goods totalling many thousand items.

The committee will establish a working relationship between the Office of Price Administration and the industry to stabilize wartime prices, and make recommendations to OPA on new developments. Mr. Richardson has been with B. F. Goodrich since 1926.

Texas Gulf Gets Army-Navy "E"

The Texas Gulf Sulphur Company has been awarded a White Star to add to the Army-Navy "E" Production Award Flag it received on November 2, 1942. Announcement of this second award was made on June 26 by Under Secretary of War Robert P. Patterson in a letter addressed to the men and women of the Newgulf plant and the Galveston Loading plant of the Company. The award was made for meritorious services on the production front. It indicates that during the period since the receipt of the "E" Award high standards have been maintained in the quality and quantity of production of sulphur.

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Pure Titanium Dioxide

UNITANE-O

A brilliantly WHITE, pure, fine titanium dioxide possessing excellent . . .

- **OPACITY**
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Suitable for ALL types of paper ranging from thin printing papers and waxing tissues to coated book and magazine stocks.

UNITANE O—110 was especially developed for paper pigmentation. Its excellent dispersion in water promotes good retention and excellent sheet formation. As a component of the beater furnish, it produces *whiter* sheets of *great brilliance*, and superior printing qualities.

SAMPLES of UNITANE O-110 will be sent promptly upon request.

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Sales and Service

Geared to Present-Day and Post-War Conditions

MORE than paper distributors and warehouses,—we offer a personnel trained to cover the strategic "Hubbs Houses Market" with time-saving thoroughness . . . . and with the sales-building technique of Paper Engineers. For a Distributorship that means *Leadership*, talk to the Hubbs House nearest you.

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New York Paper and Pulp Market Review

Newsprint Consumption Cut 5% by WPB—Sales of Paper for May Gain 4% While Inventories Drop 12% From Last Year—Stricter Control of Wood Pulp Begins—Colored Cuttings Are Active.

Office of the PAPER TRADE JOURNAL.
Wednesday, July 7, 1943.

The wholesale paper market is beginning to experience more acutely the steadily increasing restrictions of civilian business, as the limitations imposed by a tightening war economy become more and more severe. Despite the essential character of many forms of paper, both for civilian and military uses, it is a common expectation that the importance of paper may not be fully realized by government agencies and that a serious situation may, in consequence, result in the future. The short supply of labor permitted in the cutting of pulpwood by the War Manpower Commission is, of course, the prime factor in any shortage of pulp and paper that apparently must inevitably occur, unless the situation is promptly remedied.

This deterrent factor in the future supply of paper is exerting a tightening of the paper markets. Current reports received from most of the many manufacturers' representatives, jobbers, and general paper merchants, reflect grave concern over this serious manpower situation within the industry and trade. It has been suggested that the increased employment of women and older men must be adopted to continue the production and distribution of paper and paper products.

Sales of paper and paper products gained 4% for May, compared with May 1942, according to the department of Commerce. Inventories declined 12% in May 1943, compared with May 1942, but were up 1% over April 1943.

Paper production for the week ended June 26 was estimated at 88.1%, compared with 84.5% for 1942, with 99.0% for 1941, with 92.0% for 1940, and with 81.2% for the corresponding week for 1939.

Paper board production for the week ended June 26 was 96.0%, compared with 72.0% for 1942, with 90.0% for 1941, with 80.0% for 1940, and with 70.0% for the corresponding week for 1939.

Newsprint consumption of the larger publishers will be cut 5%, according to the new order issued by the WPB, effective as of July 1, 1943.

Wood Pulp

Stricter control of wood pulp is indicated in Amendment of General Preference Order M-93, issued June 19, 1943, by the War Production Board. The order states that on or before the fifth day of each month, beginning July 1943, each consumer shall file with the WPB his application for use and delivery of wood pulp for the following month, on either form WPB-2973 or WPB-2974, in accordance with instruction attached to those forms. No person shall make delivery of wood pulp from his inventory thereof to any person, except from a producer, without having first obtained the express authority of the War Production Board.

Rags

New cotton colored cuttings continue active under a good volume of mill buying. Prices are firm and are maintained at ceiling quotations. Demand for new white cuttings continues to be reported as only fair.

Old Rope and Bagging

No important change in the old rope market has been reported this week. Mill buying continues steady at ceiling prices.

Trading in old bagging has been further coufused by WPB order limiting consumption of scrap jute to southern manufacturers of cotton bale covering. Prices continue normal.

Old Waste Paper

The warnings of the War Production Board on the short supply of wood pulp and the publicity of this agency directed at a more vigorous and continued program in salvaging old waste paper, is reflected in the increased volume of mill buying. Some consumers that ordinarily do not use paper stock, are now accumulating inventories of waste paper, as the availability of wood pulp appears more uncertain. The market is reported strong and prices are very firm at ceiling levels.

Twine

No important change in the twine market has been reported at this date. Military requirements continue heavy. The prices of such grades as are available for civilian uses are firm.

New Pyott "QD" Sheaves

Widespread comment on the new Pyott QD (Quick Detachable) Sheaves among machinery manufacturers employing Multiple V-Belt Drives indicates that the unique design of these sheaves offers important advantages to both the manufacturer and user of machinery.

The ease, speed and absolute safety with which the Pyott QD Sheave is attached to or removed from the shaft is its outstanding feature. A socket wrench is the only tool needed for either job.

The easy, safe insertion or removal of Pyott QD Sheaves is of special advantage as a saver of time and labor where factory run-in tests of equipment prior to shipment is advisable. On completion of the tests, the Pyott hub can be left on the shaft, thus giving the equipment the extra sales advantage of a pre-aligned drive. Alignment of the Pyott QD Sheave is always easy for the user of the machinery because the Pyott hub remains on the shaft permanently. Of further importance to the user is that no engineering changes of any kind are involved in switching to Pyott QD Sheaves.

Pyott QD Sheaves are available in standardized QD sizes which, in spite of the important advantages they offer, are priced as low as regular standard sheaves. Full information is available in the new Pyott QD Sheave Bulletin which may be obtained on requests addressed to the Pyott Foundry and Machine Company, 328 North Sangamon St., Chicago, Ill.

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35 East Wacker Drive
Chicago

Public Ledger Building
Philadelphia, Pa.

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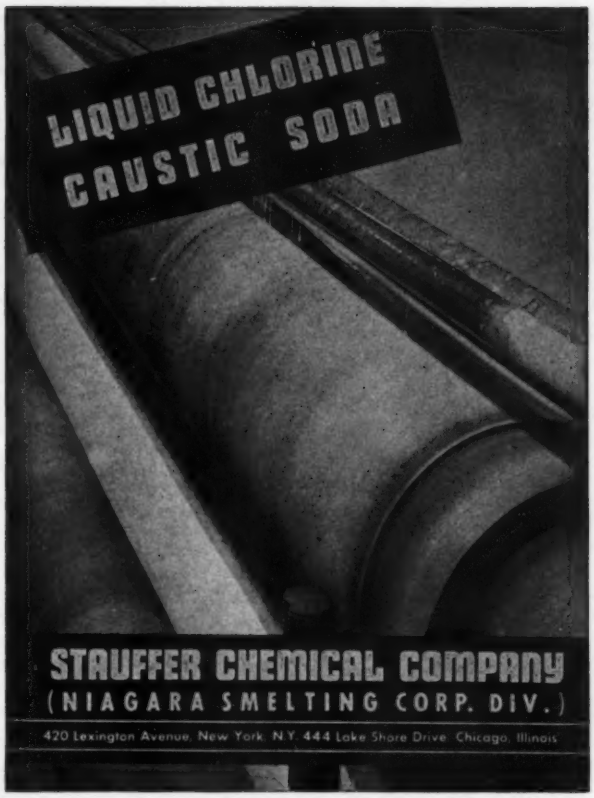
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60 East 42 Street
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for ABSORBENT papers

When Johnny comes marching home he will want the same absorbent paper conveniences he has been using in camp and even at the war front.

Are you ready for the increased demand that will come when the Axis is downed for the count?

Yes — we'll all work and win the war first, then we will put the returning heroes back on the job of serving the home front.

You will make the paper napkins, towels, facial tissues and toilet tissues. We will supply new high production machines for their production. Let us hear from you now!

HUDSON-SHARP
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MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, July 7, 1943.

BLANC FIXE—Quotations on blanc fixe are firm and continue unchanged at prevailing market levels. The pulp is currently quoted at $40 per ton in barrels, at works; the powder is offered at $60 per ton f.o.b., works. Demand reported fair for the week.

BLEACHING POWDER—Prices on bleaching powder are firm. Current demand reported improved. Bleaching powder is currently quoted at $2.50 per 100 pounds, in drums, at works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 24 cents per pound; 2,000 pounds, 24¼ cents per pound; less than 2,000 pounds, 24¾ cents per pound, f.o.b., shipping point.

CAUSTIC SODA—Prices on caustic soda are reported unchanged. Demand for the current week is reported active. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Quotations on china clay are firm and continue unchanged. Demand reported fair for the current week. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton at mine. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Quotations on chlorine unchanged. Government demand for war use continues heavy. Prices firm. Chlorine is currently quoted at from $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—Quotations on some grades of rosin are higher for the current week. "G" gum rosin is currently quoted at $3.59 per 100 pounds in barrels, Savannah. "FF" wood rosin is currently quoted at $3.51 per 100 pounds in barrels, New York. Seventy per cent gum rosin size is currently quoted at $3.78 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm. Demand reported light for the current week. Domestic salt cake is currently quoted at $15 per ton in bulk; chrome salt cake at $16 per ton. All prices in car lots, f.o.b., shipping point.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market quotations. Demand active. Quotations on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are unchanged for the current week. Supply situation tight. Pearl is currently quoted at $3.10 per 100 pounds; powdered starch at $3.20 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Supply more limited for the current week. The commercial grades are currently quoted at $1.15 per 100 pounds; iron free at from $1.75 to $1.85 per 100 pounds, in bags, car lots, f.o.b., works.

SULPHUR—Prices of sulphur are firm and continue to conform to prevailing market quotations. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $18 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $16 to $21 per ton, at mills. No quotations on imported talc.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

News, per ton—			
Roll, contract	*$54.00	@	—
Sheets	62.00	"	—
* OPA Maximum Price.			
Kraft—per cwt.—Carload Quantities Zone A, f.o.b. Mill			
Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag	*4.375	"	—
* OPA Manufacturers' Prices.			
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½	1.00	"	—
White No. 2	.90	"	—
Anti-Tarnish M.F.	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Toilet—1 M. Sheets—Per Case			
Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.60	"	—
Bleached, Jr.	3.20	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	11.25	@	—
No. 1 Manila Wrapping, 35 lb.	6.00	"	6.25
No. 2 Manila Wrapping, 35 lb.	5.75	"	6.00
Boards, per ton—			
News	*48.00	@	—
Chip	*45.00	"	—
Sgl. Mla. Ll. Chip	*60.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*63.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$39.10@$46.00	$40.25@$47.25
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	29.90 " 35.00
75% Rag	23.00 " 27.00	24.15 " 28.25
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$10.55@$12.75	$11.70@$14.25
No. 2	9.65 " 11.75	10.80 " 13.25
No. 3	9.20 " 11.25	10.35 " 12.50
No. 4	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated	$13.65	@	$15.50
No. 2 Glossy Coated	12.40	"	14.00
No. 3 Glossy Coated	11.60	"	13.25
No. 4 Glossy Coated	11.15	"	12.75
No. 1 Antique (watermarked)	10.25	"	11.75
No. 2 Offset	9.60	"	11.00
A Grade E. F.	9.35	"	10.75
A Grade S. & S. C.	9.60	"	11.00
B Grade E. F.	8.85	"	10.25
B Grade S. & S. C.	9.10	"	10.50
C Grade E. F.	8.55	"	9.75
C Grade S. & S. C.	8.80	"	10.00
D Grade E. F.	8.25	"	9.50
D Grade S. & S. C.	8.50	"	9.75

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight to Destination.

Bl. Softwood Sulphite	$76.00		
Unbl. Softwood Sulphite	65.00	@	66.00
Bl. Hardwood Sulphite	73.50		
Unbl. Hardwood Sulphite	63.50		
Bl. Mitscherlich	81.00		
Unbl. Mitscherlich	72.00		
N. Bleached Sulphate	86.00		
S. Bleached Sulphate	79.00		
N. Semi-Bleached Sulphate	82.00		
S. Semi-Bleached Sulphate	75.00		
N. Unbl. Sulphate	73.00		
S. Unbl. Sulphate	63.50		
Bl. Soda	66.00		
Unbl. Soda	62.00		
Groundwood	46.00		

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area)	10.50
West Coast (out area)	16.50

	50%-80% Air Dry Weight
Northeast	$11.50
Lake Central	11.50
Southern	14.00
West Coast (in area)	9.50
West Coast (out area)	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices.

Domestic Rags

New Rags (Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.25*
Silesias No. 1	—	"	5.75*
New Unbleached	6.75	"	7.50*
Blue Overall	—	"	5.50*
Fancy	—	"	3.50*
Washables	—	"	3.00*
Bleached Khaki Cuttings	—	"	4.25*
Unbleached Khaki Cuttings	—	"	3.50*

* OPA Maximum Prices.

BEATER BARS • BED PLATES

Time to Replace?

Because of today's acute shortages in both manpower and materials, watch your beater bars and bed plates closely. Try to anticipate your replacements as far in advance as possible . . . and then do something about it!

Standard and special bars. Plates in various patterns. Special plates to mill specifications. Also paper trimming knives, chipper knives, Dayton roll bar grinders, Dayton grinding wheels.

SIMONDS WORDEN WHITE CO.
Negley Place Dayton, Ohio

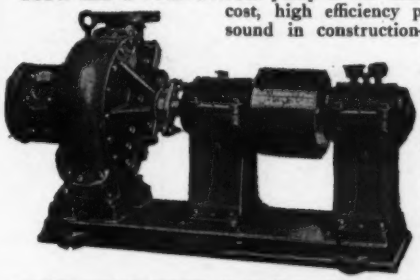
SWWCo BEATER TACKLE

STOCK PUMPS *INDIVIDUALLY DESIGNED* TO MEET YOUR OPERATING CONDITIONS ★

Actually, there is no such thing as a "stock" FREDERICK Stock Pump . . . there is only a basic design. And, when we engineer your pump, we take into account the nature of the stock, its consistency, the piping layout, and all other factors that enter into your operating conditions . . . and build the pump accordingly.

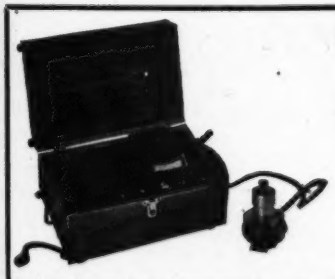
Consequently, FREDERICK pumps can be GUARANTEED to meet the operating conditions for which they are sold!

You'll find a FREDERICK pump is *the* unit for low cost, high efficiency pumping—sound in construction—dependable in operation—proved by over a quarter century's use by leading paper mills.



FREDERICK PUMPS

The FREDERICK IRON & STEEL CO.
Frederick, Maryland



PHOTOVOLT
Photoelectric
REFLECTION METER
for measurement of
Brightness
Opacity
Gloss
Color

A universal instrument for photoelectric measurements in the paper industry. Built for precision, simple to operate.

Write for literature.

95 Madison Ave. **PHOTOVOLT CORP.** New York City

More than just a

EXCELSIOR KNOX Woolen Co. Camden, Me. FELTS & JACKETS

TRADE MARK

BUT also a guarantee by men who for 78 years have prided themselves in making finer felts. TO YOU —this is the mark of dependability, longer felt life and greater saving.

KNOX WOOLEN CO.
CAMDEN, MAINE.

SCREENS *of Perforated Metal*

The Harrington & King PERFORATING Co.

5652 Fillmore St., Chicago, 44, Ill. 114 Liberty St., New York, 6, N. Y.

Old Rags

White, No. 1—			
Repacked	*3.80	"	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Third and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.80	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

OPA Maximum Prices.

Foreign Rags

All Prices nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	4.25	@	4.35
Wool Tares, light	4.25	"	4.50
Wool Tares heavy	4.50	"	5.00
Bright Bagging	4.50	"	4.85
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	2.00	"	—

* OPA Maximum Price.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.57½	"	—
Mixed Books	.85	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Mixed Ledger, colored	1.87½	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.85	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.15	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	.85	"	—

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17¼	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—

(Hard Fiber)

Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1	.07¼	@	.07½
New White No. 2	.04½	"	.05
Light Silesias	.04½	"	.04¾
Silesias, No. 1	.04	"	.04¼
Black Silesias, soft	.03¾	"	.04
New Unbleached	.07¼	"	.07½
Washable Prints	.03¾	"	.03½
Washable No. 1	.02	"	.02¼
Blue Overall	.04½	"	.05½
Cottons—According to grades—			
Washable shredding	—	"	.01¾
Fancy Percales	.03¼	"	.03½
New Black Soft	.02¾	"	.03
New Dark Seconds	1.75	"	2.00
Khaki Cuttings—			
No. 1 O. D.	.03	"	.03¼
No. 2 Mixed	.02¼	"	.02½
Corduroy	.01¾	"	.02¼
New Canvas	.04¾	"	.05¼
New Black Mixed	—	"	.02½

Domestic Rags (Old)

White No. 1—Repacked	3.80	"	—
White No. 2—Repacked	2.90	"	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	"	3.50
Sisal Rope	3.75	"	—
Mixed	1.00	"	1.50
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Box Board Cuttings	.72½	"	—
Kraft Corrugated Cuttings	2.25	"	—
Old Corrugated Containers	1.15	"	—
Overissue News	.85	"	—
No. 1 News	1.00	"	—

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.57	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Overissue News	.85	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.15	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	3.75	@	4.00
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	*4.25	"	—
Mixed Rope	1.35	"	1.50
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.60	"	3.85
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	—
Aust. Wool Pouches	4.65	"	4.87½
New Burlap Cuttings	4.75	"	5.00
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Bagging	1.35	"	—*

* OPA Maximum Price.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¾	"	.05
New White No 1.	.06¾	"	.07
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06½
Underwear Cutters, Bleached	.06¾	"	.06¾
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06¼
New Black Silesias	.03	"	.03½
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06½	"	.06¾
Blue Cheviots	.05½	"	.06
Fancy	.02¾	"	—
Washable	.02¾	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03¾	"	.03½
New Canvas	.06½	"	.06¾
B. V. D. Cuttings	.06¾	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—*
Miscellaneous	3.20	"	—*
White No. 2—			
Miscellaneous	2.65	"	—*
Twos and Blues, Repacked	2.20	"	—*
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—*
Miscellaneous	1.80	"	—*
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—*
No. 2	1.45	"	—*
No. 3	1.35	"	—*
No. 4	1.35	"	—*
No. 5, Quality A	1.35	"	—*
Quality B	1.20	"	—*
Quality C	.95	"	—*
* Old Manila Rope	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

(F. o. b Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices.

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.17½	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—
No. 1 Roofing Rags	1.55	"	—
No. 1 Roofing Bags	1.45	"	—